The Languages of Native North America

This book provides an authoritative survey of the several hundred languages indigenous to North America. These languages show tremendous genetic and typological diversity, and offer abundant opportunities for expanding our understanding of the shapes that human language can take. Part I provides an overview of structural features of particular interest, concentrating on those that are cross-linguistically unusual or unusually well developed. Among the topics treated are phonological characteristics such as syllable structure, vowel and consonant harmony, tonal patterns, and sound symbolism; morphological issues such as the nature of polysynthesis, the functions of roots and affixes, incorporation, and morpheme order; grammatical distinctions of number, gender, shape, control, space, means, manner, time, empathy, and evidence; structural distinctions between nouns and verbs, predicates and arguments, and simple and complex sentences; the nature of grammatical relations; and special speech styles such as those used with children, those attributed to men or women, narrative and ceremonial language, speech play, and Plains Sign Talk. Part II catalogues the languages by family, detailing genetic relationships, the locations and numbers of speakers, major published literature, and structural highlights. Included are languages that have arisen in contact situations: pidgins, creoles, and mixed languages.

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THE LANGUAGES OF NATIVE NORTH AMERICA

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Maps represent the approximate ranges of tribal territories at the earliest time for which information is available. Divisions between territories are schematic; boundaries were not usually sharp, and not all areas were occupied. Because earliest contacts took place at different times in different regions, the maps do not represent a single moment in time. Maps 3, 6, 7, 8, 9, 10, 11, and 12 were reproduced from the *Handbook of North American Indians* by kind permission of the Smithsonian Institution. Maps 1, 2, 4, and 5 were drawn by cartographer Roberta Bloom.

Preface

The languages of North America offer a tremendous richness for discovery, providing glimpses of the wonderful variety of shapes that human language can take. There is much that will never be known about these languages because they are disappearing at a rapid rate, but we are fortunate that their study has been characterized by a strong commitment to documentation, not only of vocabulary and grammatical structure, but also connected speech in a variety of genres.

Emphasis has been placed here on aspects of the languages that are relatively unusual cross-linguistically, or unusually well-developed. Many of the analyses combine existing data in new ways. Each chapter has been written to be as self-contained as possible, so that readers need not feel bound to begin at the beginning and read straight through to the end. Some are necessarily more technical than others due to the nature of the subject matter, but readers need not master individual sections and chapters before proceeding to those that follow.

This project has been funded in part by a President's Research Fellowship in the Humanities from the University of California and by grants for work with individual languages from the National Science Foundation (Central Pomo, Barbareño Chumash), the National Endowment for the Humanities (Cayuga), the Ontario Training and Adjustment Board (Tuscarora, Mohawk), the Phillips Fund (Central Pomo, Cayuga, Tuscarora), and the Academic Senate of the University of California (Central Alaskan Yup'ik, Mohawk, Central Pomo).

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It is hoped that this volume will bring to its readers at least some of the pleasure of discovery that its preparation has brought to me.

Transcription key

The following key to transcription practices is based in part on the table compiled by Ives Goddard for the *Handbook of North American Indians* 17: 12-16 (1996).

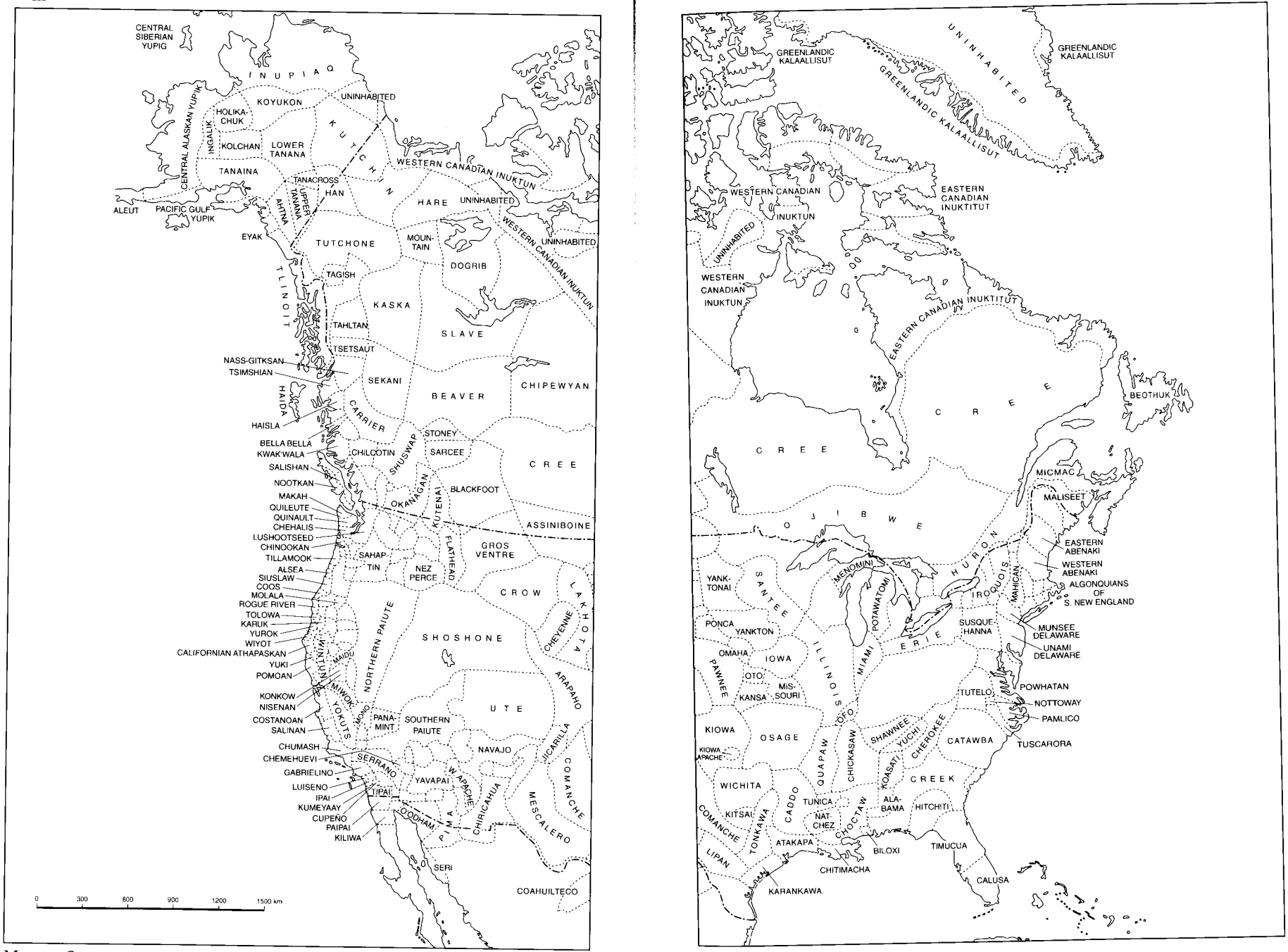
	Powell 1880	**Boas 1911**	**AAA 1916**	**Sapir et al. 1934**	**Handbook 1996**	**IPA 1989**
Stops	p	p	p		p	p
	t	t	t		t	t
VOICELESS		k	ky	k^y	k^y	c
	k	k	k		k	k
		q	q, ķ		q	q
					ʕ	ʕ
		ɛ	ʾ	ʾ, ʔ	ʔ	ʔ
	b	b	b		b	b
	d	d	d		d	d
VOICED			gy	g^y	g^y	ɟ
	g	g	g		g	g
		g	g		ġ	
Affricates			tθ		θ	
			ts	c	c	ts
VOICELESS	tc		tc	č	č	tʃ, c
		L	tɬ, tL	ƛ	ƛ	t͡ɬ
					ð	
			dz	ʒ	ʒ	dz
VOICED	dj		dj	ǯ	ǯ	dʒ, ɟ
		L,	dl	ƛ	ƛ	dl

	Powell	Boas	AAA	Sapir et al.	Handbook	IPA
Fricatives			f		Φ	Φ
	f	f	f		f	f
VOICELESS	ç	ç	θ		θ	θ
	s	s	s		s	s
	c	c	c		š	ʃ
	q	x̣	x		x	x
		x	x̣		x̣	χ
	h	h	h		h	h
					ḥ	ħ
			v		β	β
	v	v	v		v	v
VOICED	ɬ	ɬ			ð	ð
	z	z	z		z	z
	j	j	j		ž	ʒ
	x	γ	γ		γ	γ
		γ	γ		γ	ʁ
Nasals		m̥	M		M	m̥, hm
		n̥	N		N	n̥, hn
VOICELESS		ŋ̊	Ñ		Ṇ	ŋ̊, hŋ
	m	m	m		m	m
VOICED	n	n	n		n	n
	ñ	ñ	ñ	ŋ	ŋ	ŋ
		ñ	ñ		ṅ	N
Laterals						
VOICELESS		ɬ	ɬ, L		l	ɬ
VOICED	l	l	l		l	l
Retroflex						
APICAL	r	r	r		r	r
UVULAR	ɪ	r	ɾ			R

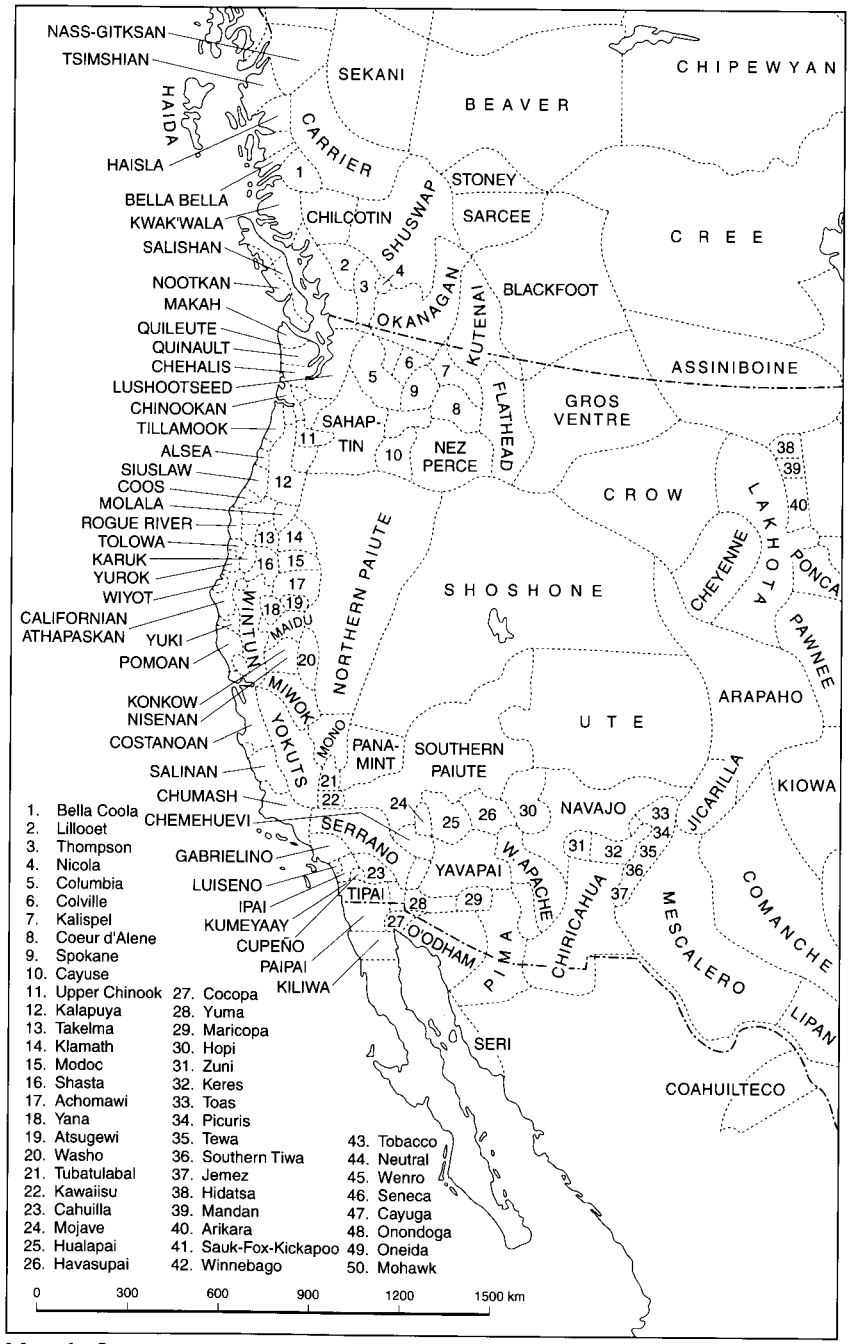
	Powell	Boas	AAA	Sapir et al.	Handbook	IPA
Glides						
VOICELESS					Y	ɣ
					W	ʍ
VOICED	w	w	w		w	w
	y	y	y		y	j
Vowels	ĭ	i	i, ī		i	i
	i		ɪ, i		ɪ	ɪ, ɪ
FRONT	ĕ	e	e, ē		e	e
UNROUND	e		ɛ, e		ɛ	ɛ
	ä		ä, ă		æ	æ
	u	u	u, ū		u	u
BACK	ŭ		ʊ, u		ʊ	ɷ, ʊ
ROUND	o	o	o, ō		o	o
	ŏ		ɔ, o		ŏ	o, ɔ
	â	â			ɔ	ɔ
	a	a	a		a	a
FRONT	ü	ü	ü		ü	y
ROUND	û	ö	ö		ö	ɸ
NONFRONT			ï		ɨ	ɨ, ɯ
UNROUND	û	E	ə		ə	ə
			ɑ, å		ʌ	ʌ
					ɑ	ɑ
Diacritics						
Aspiration	pʿ	pʿ	pʿ, p^h		p^h	pʿ, p^h
Glottalization	b'	p!	p'	p'	p̓	p'
Labialization			kw, k_w	k^w	k^w	kw, k^w
Length			ā	a·, a:	a·, a:	a:
Nasalization	a^n	a^n	ą		ą̄	
Palatalization	ny		ny, n_y	n^y	n^y	ɲ, nj
Voicelessness			N		A, N	a̧, n̥

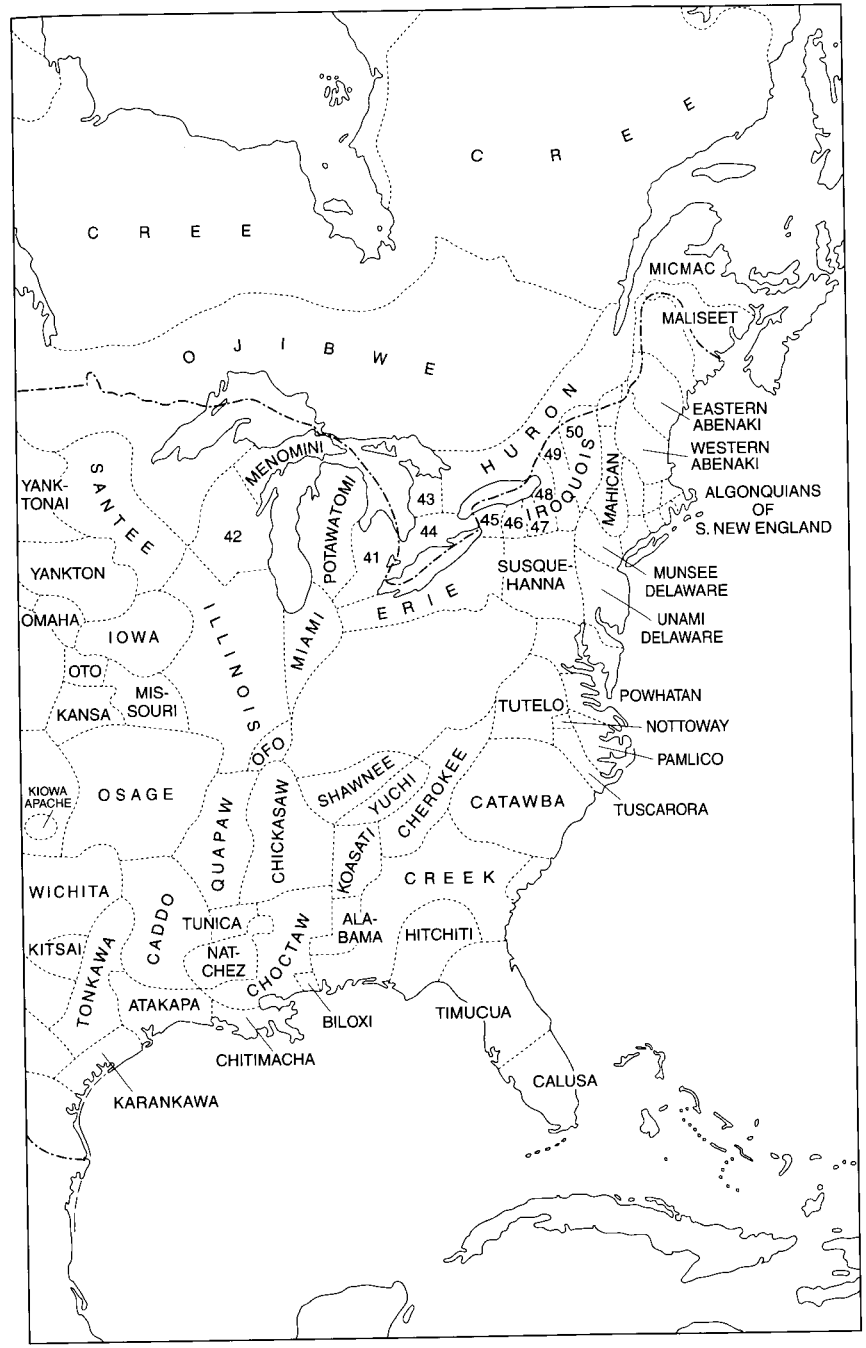
Abbreviations used in glosses

ABL	ABLATIVE
ABS	ABSOLUTIVE
ACC	ACCUSATIVE
ADJ	ADJECTIVE
AGT	AGENT
AI	ANIMATE INTRANSITIVE
ALL	ALLATIVE
AN	ANIMATE
ART	ARTICLE
AUG	AUGMENTATIVE
AUX	AUXILIARY
BEN	BENEFACTIVE
C	any consonant
CAUS	CAUSATIVE
CIS	CISLOCATIVE
CL	CLASSIFIER
CMPL	COMPLETIVE
COM	COMITATIVE
COMP	COMPLEMENTIZER
COND	CONDITIONAL
CONJ	CONJUNCTION
CONN	CONNECTOR
CONT	CONTINUATIVE
CONTEMP	CONTEMPORATIVE
COP	COPULA
CTL	CONTROL
DAT	DATIVE
DECL	DECLARATIVE
DEDUC	DEDUCTIVE
DEM	DEMONSTRATIVE
DEP	DEPENDENT
DIFF	DIFFERENT
DIM	DIMINUTIVE
DIST	DISTRIBUTIVE
DS	DIFFERENT SUBJECT
DU	DUAL
DUB	DUBITATIVE
DUR	DURATIVE
EM	EMPHATIC
ERG	ERGATIVE
EST	ESTABLISHED
EVID	EVIDENTIAL
EXCL	EXCLUSIVE
FACT	FACTUAL
FEM	FEMININE
FOC	FOCUS
FUT	FUTURE
GEN	GENITIVE
GER	GERUNDIVE
HAB	HABITUAL
HON	HONORABLE
HU	HUMAN
II	INANIMATE INTRANSITIVE
IMM	IMMEDIATE
IMP	IMPERATIVE
IMPRF	IMPERFECTIVE
INAN	INANIMATE
INCH	INCHOATIVE
INCL	INCLUSIVE
INDEF	INDEFINITE
INFER	INFERENTIAL
INST	INSTRUMENTAL
INTR	INTRANSITIVE
IRR	IRREALIS
ITER	ITERATIVE
LOC	LOCATIVE
MASC	MASCULINE
NEG	NEGATIVE
NEUT	NEUTER
NM	NOMINALIZER
NOM	NOMINATIVE
OBJ	OBJECT
OBL	OBLIQUE
OBV	OBVIATIVE
OPT	OPTATIVE
PARTICIP	PARTICIPIAL
PAT	PATIENT
PL	PLURAL
POSS	POSSESSIVE
PRCP	PERCEPTUAL
PRED	PREDICATIVE
PREV	PREVIOUS
PRF	PERFECTIVE
PROG	PROGRESSIVE
PROX	PROXIMAL
PRS.EXPER	PERSONAL EXPERIENCE
PRT	PARTICLE
Q	QUESTION MARKER
QUOT	QUOTATIVE
R	COREFERENTIAL
RDP	REDUPLICATION
RECIP	RECIPROCAL
REF	REFERENTIAL
REL	RELATIVIZER
REM	REMOTE
REP	REPORTATIVE
RES	RESULTATIVE
RESTR	RESTRICTED
RFL	REFLEXIVE
SEQ	SEQUENTIAL
SG	SINGULAR
SIM	SIMULTANEOUS
SML	SEMELFACTIVE
SS	SAME SUBJECT
ST	STATIVE
SUBJ	SUBJECT
SUBORD	SUBORDINATIVE
TA	TRANSITIVE ANIMATE
TI	TRANSITIVE INANIMATE
TOP	TOPIC
TR	TRANSITIVE
TRANSLOC	TRANSLOCATIVE
V	any vowel
VIS	VISIBLE
X	UNIDENTIFIED MORPHEME
1	FIRST PERSON
2	SECOND PERSON
3	THIRD PERSON
3'	THIRD PERSON OBVIATIVE



MAP 1a: OVERVIEW OF LANGUAGE LOCATIONS





MAP 1b: OVERVIEW OF LANGUAGE LOCATIONS: DETAIL, SHOWING LANGUAGES SPOKEN FROM HUDSON BAY SOUTHWARD.

Introduction

Nearly 300 distinct, mutually unintelligible languages are known to have been spoken north of the Rio Grande before the arrival of Europeans. Many more have disappeared with little trace. These languages differ in fascinating ways not only from the better known languages of Europe and Asia, but also among themselves, in their sounds, in the concepts they package into words, in their grammatical categories, and in their larger patterns of expression. Their structural diversity reflects their genetic diversity. While the languages of Europe are classified into just three families, Indo-European, Finno-Ugric, and Basque, those of North America constitute over 50.

The families vary considerably in size and extent. Some contain large numbers of languages and cover a wide geographical area. The Algic or Algonquian-Ritwan family, consisting of around 30 languages, stretches from present Labrador southward along the Atlantic coast as far as North Carolina, westward across the Plains into Alberta and Montana, and to the Pacific coast. The Athabaskan-Eyak-Tlingit family, with around 40 languages, extends from Alaska across the Yukon and Northwest Territories to Hudson's Bay, south through British Columbia, Alberta, Saskatchewan, and Manitoba, to Washington, Oregon, and California, and into the Southwest. The Uto-Aztecan family, with around 30 languages, covers the Great Basin and reaches east into the Plains and south into Mexico. The Salishan family, with 23 languages, is centered in British Columbia and Washington in the Pacific Northwest and extends into Alberta, Idaho, Montana, and Oregon. Several families consist of fewer languages but still cover a large territory: Eskimo-Aleut languages are spoken all across the Arctic from Siberia to Greenland; Iroquoian languages are spoken in the Northeast and Southeast; Muskogean languages dominate the Southeast. There are also many smaller families. The Tsimshianic, Chimakuan, Sahaptian, Alsean, and Coosan families of the Northwest, for example, contain just two languages each. Some languages, termed 'isolates', have no known relatives at all, such as Cayuse, Esselen, Zuni and Tonkawa. Furthermore, the genetic diversity is not uniform over the continent. While just a few families dominate the East and the Plains, 36 families are represented west of the Rocky Mountains.

Some of the languages are still spoken skillfully by people of all ages, such as Navajo with well over 100,000 speakers. The overall situation is critical, however. Almost all of the languages still in use are endangered: fewer children are learning them every year, as in the case of Navajo, or children are no longer learning them at all. Well over a third of the languages spoken at contact have already disappeared. Another quarter are now remembered by only a small number of elderly speakers. Nearly all are likely to be gone by the end of the twenty-first century.

Speakers of these languages and their descendants are acutely aware of what it can mean to lose a language. When a language disappears, the most intimate aspects of culture can disappear as well: fundamental ways of organizing experience into concepts, of relating ideas to each other, of interacting with other people. The more conscious genres of verbal art are also usually lost: traditional ritual, oratory, myth, legends, and even humor. Speakers commonly remark that when they speak a different language, they say different things and even think different thoughts. The loss of a language represents a definitive separation of a people from its heritage. It also represents an irreparable loss for us all, the loss of opportunities to glimpse alternative ways of making sense of the human experience.

The fascination of these languages, so different from those of Europe, was evident to outsiders early on, but the capacity to appreciate them could develop only slowly, a development that continues to the present. (Histories of research on the languages can be found in Haas 1969a, 1978a,b,c, Andresen 1990, Thompson & Kinkade 1990, Goddard 1996a, Mithun 1996a, and Campbell 1997.) The oldest written records of North American languages are the notes of European explorers and travelers. For some languages, they constitute the only record that survives. Due to the brevity of contacts, most of the material is limited to wordlists. Furthermore, accurate documentation was usually hindered by a lack of bilingualism and by the fact that techniques for transcribing unfamiliar sounds were little developed at the time.

The earliest contacts between Europeans and North Americans occurred in different areas at different moments over a period spanning four centuries. The first substantial documentation of a North American language occurred in 1534. When the Frenchman Jacques Cartier sailed into the Bay of Gaspé at the mouth of the St Lawrence River, he encountered a fishing party from Stadacona, near present Quebec City. Cartier did not remain long in the area, but when he left again for France, he took two captives with him. He returned the following summer with the captives, who now spoke some French, and wintered near Stadacona, making a brief excursion upriver to the Hochelaga settlement at the site of modern Montreal. In 1536 he sailed again for France, this time with ten captives. His adventures in the New World are described in accounts of the voyages, each of which includes some words from the language of the area (Biggar 1924). Cartier undertook a third expedition in 1541, but no further mention was made in the account of that voyage of the people of the St Lawrence, the Laurentians, nor in the journal of Roberval, who attempted to found a colony there several years later. When Champlain arrived in 1603 he noted that they had disappeared. We do have clues to their identity, however, in about 200 words included with the accounts of Cartier's first two voyages.

Numerous mysteries surround the Laurentian vocabularies. It is not clear who wrote them down or where: entirely at Stadacona, partly at Hochelaga, on board ship, or back in France. Shifting orthographic practices of the time complicate the task of identifying the sounds, some of which could be diagnostic for identification of the language. The lack of bilingualism obscures the meanings of some words. One word, for example, is listed in the second account as *ondaccon* 'vng saulmon' [a salmon]. It is unlike any term for any kind of fish in any of the Iroquoian or Algonquian languages spoken in the area in recent times. It does resemble words in several modern Iroquoian languages for 'kettle': Mohawk *y̨:ta(k)*, Oneida *y̨:tak*, Susquehannock *owntack*. Interestingly, the accounts of both voyages contain other words that are suspiciously similar: *undaco* (1) and *undaccon* (2): 'vng pot de terre' [an earthen pot]. Apparently the identification of *undaccon* as 'salmon' was inferred when someone pointed at a pot with a fish in it. Comparison of the Laurentian vocabularies with words from languages now spoken in the region indicates that they represent a mixture of Iroquoian languages, at least one of which was not ancestral to any of the Iroquoian languages known today (Lounsbury 1978, Mithun 1982). Laurentian is, incidentally, the source of a modern placename: *Canada* 'settlement'.

Our earliest records of languages of the Southeast, primarily names, come from the Spanish expedition of 1539-43 headed by Hernando de Soto through what is now Georgia, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, and Texas. The first words recorded of a California language are a few Chumash terms, mainly placenames, collected during the 1542 expedition of Juan Rodríguez Cabrillo up the California coast. When Sir Frances Drake spent five weeks in 1579 in Drake's Bay further north, he wrote down words and phrases of Coast Miwok. At about the same time, during Martin Frobisher's 1576 expedition to Baffin Island, Christopher Hall recorded the first short vocabulary of an Eskimoan language. New discoveries continued with exploration by sea and by land over the next three centuries. Some languages, particularly in the west, were not attested until the late nineteenth century.

Valuable documents have also come from early colonial contacts. Our only records of the Virginia Algonquian language called Powhatan are from two wordlists written down in the English colony founded at Jamestown in 1607. Captain John Smith transcribed a short vocabulary when he was in the colony from 1607 to 1609, apparently a pidginized form of the language (Goddard 1996a: 18). William Strachey, secretary of the colony between 1610 and 1611, recorded a longer one. The language

was last spoken in the late eighteenth century. Siebert notes that the Virginia Algonquians were the first Americans with whom the English had prolonged contact, and their language is the source of more loans into English than any other Algonquian language, perhaps any other single North American language (1975: 290). English loans from Powhatan include *hominy, moccasin, muskrat* (a loan blend), *opossum, persimmon, pone, raccoon, terrapin, tomahawk* and others. (Slightly later loans from Algonquian languages of the Northeast include *caribou* from Micmac, *moose* and *sachem* from Narragansett, and *skunk, wampum,* and *wigwam* from Abenaki.) Lack of bilingualism still hindered accuracy, however, as remarked by Siebert.

> Strachey must have indicated by signs to one of his informants that he was hungry, to which the Indian replied /ketassames/ 'I will give you food', and Strachey thought he was calling him 'a beggar' and recorded *Cuttassamais* 'a beggar'. A gust of wind stirred up some dust, and blew a speck in the eye of Strachey's Indian associate who commented /nepensen/ 'I have something . . . in my eye', but Strachey misunderstood him and wrote down *Nepensun* 'dust'. (Siebert 1975: 292)

More substantial documentation of the languages of North America has come out of the missionary tradition. Because missionaries lived for extended periods in native communities, they had opportunities to learn the languages and ponder their structures. The missions varied in their approaches to the languages. When Jesuits arrived in eastern Canada in the early seventeenth century, they brought training in classical languages, procedures for learning new ones, and strong motives for mastering them. They realized that the success of their undertaking depended on their ability to make themselves understood (Hanzeli 1969). Their descriptions of the Algonquian and Iroquoian languages of the area are remarkable. By contrast, many of the Franciscans who established missions along the California coast between 1769 and 1823 made relatively little attempt to learn or document the local languages. They expected their converts to learn Spanish. A notable exception was Felipe Arroyo de la Cuesta, of the mission at San Juan Bautista, who compiled a grammar and lexicon of Mutsun (1861, 1862) and collected words and phrases from some 20 other languages as well.

Missionary descriptions constitute the only attestation of a number of languages. The Franciscan Francisco Pareja arrived in Florida in 1595, where he worked among the Timucua for 31 years (Granberry 1993: xvi). He published a grammar in 1614 and produced bilingual Timucua-Spanish catechisms, totaling over 2000 pages of Timucua text. Pareja's work is the primary record of the language, last spoken in the early nineteenth century. English missionaries in the Massachusetts colony produced important records of the Algonquian languages spoken there. In 1643 Roger Williams published a substantial vocabulary of Narragansett in *A key into the language of the Americas*. In 1663 John Eliot published a Bible translation in the closely related

Natick or Massachusett language, followed in 1666 by a grammar. Natick has not been spoken for over a century and Narragansett for nearly two, but these works have provided precious information on the languages as well as tools for deciphering Massachusett documents written by native speakers (Goddard & Bragdon 1988).

The early missionary grammarians were faced with challenges for which they could not have been fully prepared. The best equipped were trained in classical languages, and they naturally sought to understand the structures of the new languages they encountered in terms of those they already knew. Nevertheless, many did remarkably well, recognizing phonetic and grammatical distinctions not present in European languages. In his 1636 remarks on Huron, for example, Brébeuf notes that *'ils ont vne lettre dont nous n'auons point la pareille, nous l'exprimons par Khi'* [they have a letter to which we have nothing to correspond--we express it by Khi] (Brébeuf 1636 in Thwaites 1959: 10.116) and comments on the absence of labials. He describes the pronominal prefixes in verbs and kinship terms, the three genders, three numbers, and the prevalence of complex words: *'La varieté de ces noms composez est tres-grande, & c'est la clef du secret de leur Langue'* [The variety of these compounds is very great, and that is the key to the secret of their Language] (1636 in Thwaites 1959: 10.116-7). He anguished over differences in grammar and lexicon. Since kinship terms cannot occur without possessive pronouns in Huron, the missionaries were at a loss when it came to translating *'Au nom du Pere, & du Fils, . . .'* [In the name of the Father, and the Son, . . .]: *'Oserions-nous en vser ainsi, iusqu'à ce que la langue Huronne soit enrichie, ou l'esprit des Hurons ouuert à d'autres langues?'* [Would we venture to employ it thus [with possessive prefix] until the Huron language should be enriched, or the mind of the Hurons opened to other languages?] (Brébeuf 1636 in Thwaites 1959: 10.120-1). Missionary work has continued throughout North America to the present and resulted in valuable records of the languages, not only vocabularies and liturgical materials, but also grammars, dictionaries, and sometimes texts.

As more came to be known about the languages, an independent scholarly tradition began to develop. There was concern on the one hand for documenting the languages being discovered, and on the other for making sense of the complex picture they presented. This second concern led to two lines of research. One was genetic, aimed at discovering historical relationships among the languages. The other was typological, aimed at understanding the types of grammatical structures that characterize them.

Beginning in the late-eighteenth century, scholars began to assemble collections of vocabularies from different languages. The American Philosophical Society was formed in 1769, and one of its emphases, which continues to the present, became the collection of materials on North American languages. Thomas Jefferson, an early president of the Society, encouraged the wide collection of vocabularies, sending out questionnaires and interviewing speakers, partly at the suggestion of Catherine the

Great of Russia. Lewis and Clark collected material for him on their expedition of 1803-6. Unfortunately little of that material has survived, but the practice of equipping field researchers with 'schedules', questionnaires concerning words in various semantic domains, continued through the century. John Pickering, a Boston lawyer, devised a system for recording new sounds more consistently (1820). Additional schedules, some with instructions for transcription, were compiled by Lewis Cass, governor of Michigan (1821a,b), by Albert Gallatin in 1825-6 for the U.S. Department of War, by Henry Rowe Schoolcraft (used for his report of 1851-7), and William Dwight Whitney for the Smithsonian (Gibbs 1861, 1863, 1865, Powell 1877).

Comparisons of the vocabularies that were collected formed the primary basis for several genetic classifications. In 1797 Benjamin Smith Barton, professor of medicine, natural history, and botany at the University of Pennsylvania, presented Jefferson with a set of comparative vocabularies arguing that the languages of the Americas were descended from those of Asia (Barton 1797, 1798). Gallatin assembled a preliminary scheme in 1823 (sent to Alexander von Humboldt but now lost), which he revised in 1836 and again in 1848 as better information on more languages became available. The 1836 version concentrated on languages east of the Rocky Mountains, since they were better known at the time, but the 1848 version incorporated a classification of languages of the Northwest Coast and Plateau regions assembled by Horatio Hale from material he collected on the Wilkes Expedition. Robert Latham, a British physician, compiled a classification of all the languages of the world, including North America (1856, 1860, 1862). Some of the connections he proposed were later validated, but many others were subsequently found to be erroneous.

The most significant undertaking was that of John Wesley Powell, first in his capacity as head of the U.S. Geographical and Geological Survey of the Rocky Mountain Region, then from 1879 as founder and head of the Bureau of Ethnology of the Smithsonian Institution (later known as the Bureau of American Ethnology or BAE). His classification was based on 670 existing vocabularies and further material collected by his staff, which included Albert Gatschet, Henry Henshaw, and James Owen Dorsey, as well as Jeremiah Curtin, J.N.B. Hewitt, James Mooney, and his bibliographer James Pilling. His 1891 classification of the languages north of Mexico into 58 families is remarkably close to that generally accepted at present.

Since the Powell classification, research on genetic relations has been directed at refining the scheme, at subgrouping within the established families, and at uncovering deeper relationships among the families. All of the work has been aided by the availability of further data from the languages and advances in techniques for reconstructing the phonologies, vocabularies, and grammatical features of parent languages.

When Alfred L. Kroeber established the Department of Anthropology at the University of California at Berkeley in 1901, he set about documenting the rapidly

vanishing languages and cultures of California. The area showed tremendous linguistic diversity: 22 of Powell's 58 families were represented. On the basis of structural similarities, Kroeber, aided by Roland Dixon, first proposed three typological groupings: Northwestern California, Central California, and Southwestern California (Dixon & Kroeber 1903). Similarities in vocabulary were noticed as well, but attributed to contact. Over the next decade, Dixon and Kroeber began to entertain the possibility that the resemblances might be due to remote genetic relationships (Dixon & Kroeber 1913, 1919). They were joined by other scholars documenting languages in the area including Edward Sapir, who had been working with Yana in Northern California and other languages of the West. Sapir eventually proposed a grand scheme combining the 58 Powellian families into six superstocks (Sapir 1921a, 1929), many based primarily on typological similarities. Some of the proposals have since been validated, such as that linking the Algonquian languages of the East and the Plains to Wiyot and Yurok in California. Some have been abandoned, such as his Hokan-Siouan superstock. Some continue to be investigated, especially elements of the Hokan and Penutian groupings. As more information becomes available on the languages, and more reconstruction at the family level is completed, some relations may become clearer. Some will remain unknowable, however, because the languages in question are no longer spoken and our information on them is too sparse.

An even more encompassing scheme was proposed by Joseph Greenberg (1987a,b, 1989), which classified all of the languages of the Americas into just three genetic groups: Eskimo-Aleut, Na-Dene (Athabaskan-Eyak-Tlingit plus Haida), and Amerind (all other languages of North, Central, and South America). The method employed, simple inspection of vocabulary lists from large numbers of languages, was essentially that used by the earliest philologists before basic techniques of historical reconstruction and classification were developed in the nineteenth century. Serious flaws have been pointed out in both the method and its application, which leave the proposals unsupported (Chafe 1987, Goddard 1987, 1990a, Golla 1987, 1988, Campbell 1988, Adelaar 1989, Matisoff 1990, Rankin 1992, Ringe 1992, 1993, Goddard & Campbell 1994, and others). Detailed discussions of the history of genetic classification can be found in Goddard 1996b and Campbell 1997.

Typological studies aimed at understanding the exotic structures of American languages began early as well. In his 1819 report to the American Philosophical Society, Peter Stephen Duponceau drew attention to structural similarities he had noticed among languages of the Americas. He pointed to a feature he termed 'polysynthesis':

> A polysynthetic or syntactic construction of language is that in which the greatest number of ideas are comprised in the least number of words. This is done principally in two ways. 1. By a mode of compounding locutions which is not confined to joining two words together, . . . but by interweaving together the most significant sounds or syllables of each simple

> word, so as to form a compound that will awaken in the mind at once all the ideas singly expressed by the words from which they are taken.
> 2. By an analogous combination [of] the various parts of speech, particularly by means of the verb, so that its various forms and inflections will express not only the principal action, but the greatest possible number of the moral ideas and physical objects connected with it, and will combine itself to the greatest extent with those conceptions which are the subject of other parts of speech, and in other languages require to be expressed by separate and distinct words. Such I take to be the general character of the Indian language. (Duponceau 1819, cited in Haas 1978a: 131)

This discussion was expanded in a monumental treatise *Mémoire sur le système grammatical des langues de quelques nations indiennes de l'Amérique du nord* (1838), which won the Prix Volney in France. Duponceau emphasized repeatedly that this polysynthetic character was shared by all languages of the Americas without exception, and distinguished them as a group from the languages of Europe and Asia. His conception of the structural nature and homogeneity of the languages was largely accepted and passed down through the nineteenth century. Of course Duponceau's work was focused on the information available at the time, chiefly from the Algonquian and Iroquoian languages of the East. These languages would still be described as polysynthetic today, as would many other North American languages. The feature is by no means universal, however. Work carried out during the twentieth century, especially under the leadership of Franz Boas, Edward Sapir, and their students, has greatly deepened our understanding of the kinds of structures to be found among North American languages and of their diversity.

Franz Boas, who was born in Germany and trained in physics, mathematics, and geography, encountered his first North American language when he participated in an expedition to Baffinland in 1883-4. After several other field trips to the Northwest Coast, he immigrated to the United States, where he ultimately assumed a post at Columbia University, serving as professor of anthropology from 1899 until his death in 1942. His primary interests lay in the grammatical categories that reflect cognitive categories, in the role of grammar in its textual context, and in the place of language in its cultural context. These interests came out of work with an extraordinary number of languages, including various Eskimoan languages, Coast Tsimshian and Nisgha, Wakashan (Kwakwala or Kwakiutl, Nootka, Bella Bella or Heiltsuk, Makah), Chemakum, Salishan (Upper Chehalis, Lower Chehalis, Comox, Pentlatch, Sechelt, Squamish, Cowichan Halkomelem, Songhees, Tillamook, Lillooet, Thompson, Okanagan), Kutenai, Chinookan (Lower Chinook, Kathlamet), Chinook Jargon, Keresan dialects (Laguna, Cochiti, Santo Domingo), Siouan (Lakhota, Dakota), Masset Haida, Tlingit, Athabaskan (Tsetsaut, Nicola), Isleta, Zuni, and Oneida.

One of his greatest contributions to the field was his sensitivity to the ways in which languages can differ. In a paper 'On alternating sounds', he pointed out that different

principles for classifying speech sounds across languages result in different perceptions of them (Boas 1889a). He appreciated the cultural implications of differences in vocabulary: 'On the whole the degree of specialization will depend on cultural interests. Categories that are culturally unessential will not be found; those culturally important will be detailed . . . In regard to all these matters language is exceedingly plastic and follows the demands of culture.' (Boas 1938: 141) His attention to differences has sometimes been misinterpreted as a view that there are no principles common to all languages. Such was not the case.

> It seems well worth while to subject the whole range of linguistic concepts to a searching analysis, and to seek in the peculiarities of the grouping of ideas in different languages an important characteristic in the history of the mental development of the various branches of mankind. From this point of view, the occurrence of the most fundamental grammatical concepts in all languages must be considered as proof of the unity of fundamental psychological processes. (Boas 1911a: 71)

Among his many illustrious students was Edward Sapir. Like Boas, Sapir had a keen ear and worked with an impressive number of languages, including Wishram Chinook, Takelma, Yana, Nootka, Sarcee, Kutchin, Hupa, Navajo, and Southern Paiute, in addition to briefer work with Munsee Delaware, Eastern Abenaki, Micmac, Maliseet, Montagnais, East Cree, Eastern Ojibwa, Mohawk, Seneca, Tutelo, Hopi, Alsea, Achumawi, Chasta Costa Tututni, Chimariko, Yurok, Thompson, Comox, Coast Tsimshian, Chilkat Tlingit, Ingalik, and Haida. His thinking also evolved from his experiences with the languages. He, too, was fascinated by the dynamic relations between language and thought: 'We see this complex process of the interaction of language and thought actually taking place under our eyes. The instrument makes possible the product, the product refines the instrument.' (Sapir 1921b: 16)

One of the ways in which Sapir extended the ideas of Boas was in his attention to pattern. He articulated what came to be known as the phonemic principle (independently developed in Europe): 'Individual variations and such conditional variations as we have discussed once cleared out of the way, we arrive at the genuine pattern of speech sounds . . . it almost goes without saying that two languages, A and B, may have identical sounds but utterly distinct phonetic patterns.' (Sapir 1925: 42) This principle was to form the foundation of structuralist linguistics and revolutionize the process of linguistic analysis. Once procedures were developed for the identification of distinctive sounds, higher levels of structure became more visible.

Over the twentieth century, as more became known about the languages, as linguistic theory advanced, and as the discipline of linguistics became institutionalized in academic departments, the study of North American languages expanded as well. A wealth of grammars, dictionaries, and texts appeared, many by students of Boas

and Sapir and by students of theirs, especially those of Mary Haas at Berkeley.

At the same time, languages of North America played an important role in the development of linguistic theory, particularly as techniques for phonological and morphological analysis were being developed in the structuralist tradition. Effective analytic techniques were crucial to the documentation of the rapidly disappearing languages, and the languages in turn provided challenging tests for their applicability. When, however, those approaches to linguistic structure began to be superseded in the mid-twentieth century by English-based models in the generative tradition, interest was to some extent diverted from languages other than English. The diversion occurred at an unfortunate time, the last period during which a large number of the languages were still spoken well. Often North American languages were either forced into English-based models of description or disregarded altogether. As the field has matured, however, the importance of languages that are typologically quite different from English has come to be appreciated in new ways.

The languages of North America display a wealth of distinctions, categories, and patterns that we might not imagine possible from English alone; they differ among themselves as much as they do from European languages. They also force us to question certain basic assumptions about language structure. These distinctions, categories, and patterns are the subject of Part I of this book.

The languages vary greatly in their inventories of sounds: Crow, a Siouan language of Montana, contains just 10 consonants, while Heiltsuk, a Wakashan language of British Columbia, contains over 40. Syllable structure is quite simple in some languages but it can be dauntingly complex in others, as in Kathlamet Chinook words like *qtkkst* 'done'. Several kinds of tone systems can be found, and in a number of languages it is possible to trace their origins. Patterns of vowel and consonant harmony occur in several families. Many languages, particularly throughout the West, show sound symbolism, whereby certain sound substitutions have semantic effects. These topics are discussed in Chapter 1 on sounds and sound patterns.

An area in which North American languages offer fascinating views of the creative capacity of the human mind is in their words. Some cross-linguistic differences in vocabulary reflect aspects of the natural environment, but others have simply grown out of separate cultural traditions. Central Alaskan Yup'ik, an Eskimoan language, contains nouns like *qelta* 'fish scale, bark of tree, eggshell, peel' and *ella* 'world, outdoors, weather, universe, awareness, and sense', which seem quite general in meaning from the vantage point of English (Jacobson 1984). Yup'ik also contains nouns like *qellukaq* 'aged seal flipper' and *alrapaq* 'back-to-back sitting partner' which seem quite specific. Some terms, like the verb *tage-* 'to go ashore, go up any gradual incline, move back from the center of attention' are not simply more general or specific, but cover a different semantic space from any English word.

Words in many of the languages are astonishingly long, consisting of multiple meaningful parts. Such words are typical of Mohawk, an Iroquoian language of Quebec, Ontario, and New York State. The first line in the Mohawk example below gives the word as spoken (spelled in the community orthography), the second line segments it into meaningful parts, the third line shows the meaning of each part, and the fourth line provides a free translation.

MOHAWK WORD — Kanerahtenhawi Nicholas, speaker

wa'tionkwatonhontsahrihten

wa'-t-ionkw-at-onhonts-hri-ht-en-'

FACTUAL-CHANGE.OF.STATE-they/me-own-earth-broken-cause-for-PERFECTIVE.ASPECT

'they caused my earth to be broken up for me' = 'they plowed my garden'

One might wonder whether such a structure is indeed a single word. Among the issues explored in Chapter 2 is what it means to be a word.

This Mohawk word consists of four prefixes (*wa'-*, *t-*, *ionkw-*, *at-*) two roots (*-onhwents-*, *-hri-*), and three suffixes (*-ht*, *-en*, *-'*). Each would be meaningless to a speaker in isolation, not even recognizable as part of the language. Many North American languages have surprisingly large inventories of prefixes and/or suffixes. Yup'ik contains over 450 (postbase) suffixes alone. Some specify the same kinds of distinctions marked by suffixes in many languages, like the causative *-cete-* comparable (though not equivalent) to the Mohawk *-ht* of *wa'tionkwatonhontsahrihten* or the English *-en* of *moist-en* ('cause to become moist'). Many Yup'ik suffixes convey meanings that we might not expect to find in suffixes at all, such as *-ir-* 'have cold . . .' It can be seen following the noun stem *it'ga-* 'foot' in *it'gairtua* 'my feet are cold'. Another issue explored in Chapter 2 is the kind of meanings expressed in roots and affixes cross-linguistically, and the implications of the formal difference.

Among the assumptions commonly brought to the study of a new language is the existence of certain lexical classes or kinds of words, such as nouns, verbs, and adjectives. Certain languages of North America call into question the universality of some of these categories. Many exhibit no identifiable adjectives, adverbs, prepositions, or postpositions and some even challenge the universality of the noun/verb distinction. These issues are also addressed in Chapter 2.

Languages differ not only in what they permit speakers to say easily, but also in what they require them to specify in order to speak grammatically. A number of grammatical distinctions can be seen in North American languages that are either relatively rare in languages elsewhere, or that play only minor roles in their grammars. Chapter 3 explores the range of grammatical categories to be found in North America, focusing on distinctions that are unusual or unusually well-developed,

and that are well integrated into the grammar.

We also tend to bring certain assumptions to the investigation of syntactic structure. One involves the distribution of information over predicates and arguments. Predicates typically describe actions, usually encoded in verbs. Arguments typically identify people and objects, referred to by pronouns, nouns, or larger noun phrases. Our expectations are borne out in many North American languages, but some show a subtly different principle underlying the distribution of information over syntactic structure, one grounded in pragmatic considerations. Another common assumption is that basic word order can always be described in syntactic terms, such as SUBJECT-VERB-OBJECT (or perhaps SUBJECT-PREDICATE-OBJECT). Some North American languages show no basic, syntactically determined word order; word order is always a function of other factors. A third common assumption is the universality of certain syntactic categories such as subjects and objects. Some North American languages show no internal evidence of formal subject or object categories.

More complex syntactic structures show interesting cross-linguistic variation as well. Certain North American languages demonstrate that the amount of information encoded in a clause can vary: what speakers of one language may express in a single clause speakers of another express in a series of clauses. The explicitness of connections between clauses varies as well. In some languages, the relations among clauses are obligatorily and elaborately specified within the verbal morphology; in others they are specified by constituent order and particles; in still others, they are barely marked at all. These and other syntactic issues are addressed in Chapter 4.

Most languages encompass a variety of registers or forms of speech appropriate for different contexts, for special listeners, for use by only men or only women, for storytelling or ritual, or for play. Chapter 5 describes some of the special registers that have been described in North America, including Plains Sign Talk.

Finally, Part II of the book provides a catalogue of the languages. It is preceded by a discussion of the ways that languages may be related to each other: genetically, as diverging descendants of a common ancestral language, and areally, as converging neighbors spoken in the same or adjacent regions. Issues in the establishment of genetic relationship are addressed and a survey of proposals concerning possible deeper genetic links is provided. The languages are then listed by family, with information on their speakers, major published literature, and highlights of their structures. Languages that have developed from contact situations are then described.

Many features of North American languages are strikingly exotic and seem astonishing in light of our current understanding of the better-studied languages of the world. The identification of such phenomena can sharpen our outlook, often even leading to their discovery in more familiar languages where they had previously gone unnoticed, and to the realization that many are not so rare after all.

PART I

THE NATURE OF THE LANGUAGES

1

Sounds and sound patterns

The languages of North America show great diversity in the sounds they contain and in the phonological patterns they exhibit, some of them relatively rare in the world.

1.1 Inventories

One of the most striking differences among the languages is the numbers of consonants they distinguish. Mohawk, for example, a Northern Iroquoian language of Quebec, Ontario, and New York State, contains just 9 distinctive consonants: *t, k, s, n, r, w, y, h,* and *ʔ*. Tlingit, an Alaskan/British Columbia relative of Eyak and the Athabaskan languages, contains 45: *t, ƛ, c, č, k, kʷ, q, qʷ; tʰ, ƛʰ, cʰ, čʰ, kʰ, kʰʷ, qʰ, qʰʷ; t̓, ƛ̓, c̓, č̓, k̓, k̓ʷ, q̓, q̓ʷ, ʔ, ʔʷ; ɬ, s, š, x, xʷ, x̲, x̲ʷ, h, hʷ; ɬ̓, s̓, x̓, x̓ʷ, x̲̓, x̲̓ʷ, n, y, ÿ, w* (Leer 1991: 10). (Transcription conventions are discussed in section 1.2.) Vowel inventories do not generally show the same range of variation. To some extent, the elaboration of consonant inventories is an areal phenomenon. Many languages in the East, such as those of the Algonquian and Iroquoian families, have relatively small sets of consonants, while many in the West, such as those of the Athabaskan-Eyak-Tlingit, Wakashan, Salishan, Palaihnihan, Pomoan, and Chumashan families, have quite large ones. Certain distinctions are of special interest, either for their comparative rarity among the languages of the world or for their high concentration on this continent. Many appear in geographically contiguous but genetically unrelated languages.

A number of unrelated languages in California distinguish two sets of apical stops: an anterior one that ranges from interdental to postdental (usually written *t* or *t̲*), and a posterior one that ranges from postdental or alveolar to retroflex (usually written *ṭ*). A survey of the nature and extent of distinctions among apicals is in Langdon & Silver 1984. They have been documented in Chimariko, Yuki, Wappo, Esselen, Salinan, all of the Pomoan, Miwokan, Costanoan, and Yokutsan languages, and, among the Yuman languages, in Yuma, Diegueño, Cocopa, and perhaps Mojave. Only Wappo, Yuki, the Pomoan languages, Southern Sierra Miwok, Yuma, Diegueño, and Cocopa show a contrast between dental and alveolar stops, but in these languages, the contrast appears in all series. The Pomoan languages, for example,

contrast dental $ʇ$, $ʇ^h$, $ʇ'$ and alveolar t, t^h, and t'. Shaul & Andresen 1989 report that retracted apical stops spread from the Yuman languages of California to the neighboring Piman (Uto-Aztecan) languages of Arizona: O'odham contrasts apico-dental d, apico-alveolar $ḍ$, and lamino-alveolar j, as well as apico-alveolar s and retroflex $ʂ$. The phonetic nature of these sounds is examined in detail in Dart 1993.

Bright 1978 draws attention to the pervasiveness of a back $ʂ$ throughout an area centered in California but extending northward into Oregon, eastward into the Great Basin, and southward into Baja California and Sonora. Some early transcriptions of languages containing the sound show erratic alternations between s and $š$, often accompanied by comments on the difficulty of identifying it. Unlike modern European sibilants, made with the tongue tip approaching the lower or upper teeth, the $ʂ$ is retracted to a postalveolar position. Some of the languages contain only a single sibilant, either $ʂ$ alone (Northern Paiute, Patwin, Northern Sierra Miwok, Alsea, Molale, Kalapuya, Takelma, Tillamook, Kiliwa, Yaqui) or an allophonic alternation between s and $ʂ$ (Shasta, perhaps Achumawi, Yana, Tübatulabal, Southern Paiute, Ventureño Chumash). Some languages contrast s and $ʂ$ (Karuk, Wiyot, Atsugewi, Kato, Yuki, Wappo, Washo, Bodega and Central Sierra Miwok, Chuckchansi and Yawelmani Yokuts, Mutsun, Rumsen, Kitanemuk, Gabrielino, Diegueño, Yuma, Paipai): Karuk *sú·f* 'creek', *ʂú·f* 'backbone'. Some languages contrast $ʂ$ and $š$ (Yurok, Hupa, the Pomoan languages, Southern Sierra Miwok, Chawchila and Choynimni Yokuts, Barbareño Chumash). Some languages show a three-way contrast (Tolowa, Serrano, Luiseño, Cupeño, Cocopa). Bright notes that $ʂ$ predates s in many languages and proposes that it may have been the unmarked sibiliant before contact.

In some cases the contrast has given rise to the dental fricative $θ$. Bright documents a shift among younger Karuk speakers from s to $θ$. Hinton 1981 describes a similar shift in Upland Yuman languages, beginning with Mojave in the 1850s and spreading to Walapai, Havasupai, and Yavapai by the early 20th century: $*ʂ > s$, and $*s > θ$. The fricative $θ$ is not common cross-linguistically, but it does appear in languages scattered across the continent. It occurs in Karuk, Atsugewi, Wintu, and Central Sierra Miwok in California; in some Yuman languages and Santa Clara Tewa (Kiowa-Tanoan) in the Southwest; and in some dialects of Northern Paiute and Shoshone (Uto-Aztecan) in the Great Basin. It is found in a number of Algonquian languages, but only Arapaho has continued the Proto-Algonquian $*θ$; Mahican, some Munsee Delaware dialects, Shawnee, and Kickapoo-Sauk-Fox have developed $θ$ from Proto-Algonquian $*s$, a change still in progress in Kickapoo (Goddard p.c. 1998). $θ$ appears in Iowa-Oto and Dhegiha (Siouan) on the Plains, in some dialects of Tuscarora (Iroquoian), and in Choctaw and Chickasaw (Muskogean), languages all originally spoken in the Southeast. Within Athabaskan, it appears in the western Subarctic and in a Chasta Costa dialect in Oregon (corresponding to s in closely related Tututni). A $θ$ has also developed from $*ts$ in some Coast Salishan languages: Halkomelem, Pentlatch, the Saanich dialect of Northern Straits, and the Sliammon dialect (but not the Island dialect) of Comox.

A number of languages contain laterals in addition to plain l, such as a voiceless fricative $ɬ$, a voiceless affricate $ƛ$, a voiced affricate $λ$, and/or an ejective affricate $ƛ'$. Multiple laterals occur in the Muskogean, Coosan, Chinookan, Sahaptian, Chimakuan, Salishan, Wakashan, Tsimshianic, Athapaskan-Eyak-Tlingit, and Eskimo-Aleut families, as well as in Yuchi, Zuni, Tonkawa, Lake Miwok, Alsea, Klamath, Molala, Siuslaw, Kutenai, and Haida. Navajo, like other Athapaskan languages, distinguishes l, $ɬ$, $λ$, $ƛ$, and $ƛ'$, described in detail in McDonough & Ladefoged 1993 and Ladefoged & Maddieson 1996: 208-9. Tlingit also shows 5 distinct laterals, though none is a plain l: $λ$, $ƛ$, $ƛ'$, $ɬ$, and $ɬ'$.

Uvular or postvelar obstruents (q, $x̣$) are common, particularly in the West. They occur in languages of the Chumashan, Wintun, Palaihnihan, Coosan, Chinookan, Sahaptian, Salishan, Chimakuan, Wakashan, Tsimshianic, and Eskimo-Aleut families, as well as in some Pomoan languages, some Athabaskan languages, Chimariko, Palaihnihan, Alsea, Klamath, Molala, Kutenai, and Haida. Central Alaskan Yup'ik even contains a verb stem *pikagte-* [*pikaxtə*] 'to mispronounce words by substituting the front velars for the back velars' (Jacobson 1984: 291). The distinction can be seen in Yup'ik *kəxutaaŋa* 'she is biting me' and *qəx̣utaaŋa* 'I am cold'. The contrast is pervasive, but the phonetic distance between velars and uvulars varies considerably.

Many languages contrast rounded and unrounded back obstruents, usually velar/labio-velar k/k^w and x/x^w, and uvular/labio-uvular q/q^w and $x̣/x̣^w$. Such contrasts appear in the Uto-Aztecan, Yuman, Salishan, Coosan, Chimakuan, Wakashan, and Tsimshianic families, and in Natchez, Wichita, Coahuilteco, Tonkawa, Zuni, Alsea, Takelma, and Zuni. Tlingit distinguishes laryngeals $ʔ$ versus $ʔ^w$ and h versus h^w.

Pharyngeal and pharyngealized segments are unusual among the world's languages, but they occur in languages of adjacent families in northwestern North America.

In the Salishan family, pharyngeals or pharyngealization appear only in Interior languages. The Proto-Interior-Salishan pharyngeals have remained pharyngeal and fricative in Moses Columbian and Coeur d'Alene, they appear as lightly pharyngealized resonants or uvular fricatives in Okanagan, and they have nearly disappeared as distinct sounds from Spokane, Kalispel, and Flathead (Kinkade 1967a). Columbian Salish exhibits the most pharyngeals with 6: $ḥ$ is a strong voiceless pharyngeal fricative (*ḥámp* 'fall off'); $ḥ^w$ is the same with lip rounding, but appearing in only one word (*ʔəḥ^waʔ* 'cough, have a cold'); $ʕ$ is a voiced pharyngeal fricative (*nx^waʕúlux^w* 'hole in the ground'); $ʕ^w$ is the same with lip rounding (*c̓ʕʕ^wən* 'chip arrowheads'); $ʕ'$ is like the voiced fricative but with glottalization (*xaʕ̓xaʕ̓úsən* 'a fan');

and ʃ́ʷ is the same but with lip rounding (*nləʃ́ʷlaʃ́ʷúsən* 'glasses, spectacles'). Mattina notes that in some of the Interior languages, stem pharyngeals move to suffixes when stress shifts to those suffixes: Colville *q̓ʷʃáy* 'black' + *-lscút* 'clothes' = *q̓ʷəy-lscʃát* 'his clothes are dirty' (1979). Vowels adjacent to pharyngeal consonants are lowered or retracted, as in 'clothes' above. The retraction is still evident even in those Interior languages that have lost the original pharyngeal consonants. The pharyngeals trigger interesting retracting harmonies among vowels, described in 1.5.

Pharyngeal consonants have also developed in two Southern Wakashan languages, Nootka and Nitinat. Although the Salishan and Wakashan families are adjacent, the languages containing pharyngeals are not, separated by the Coast Salishan languages. Nootka contains two: *ʔ*, described by Sapir (cited by Jacobsen 1969: 125) as a 'glottal stop pronounced with the pharyngeal passage narrowed by the retraction of the back of the tongue toward the back of the pharyngeal wall', and *ḥ*, described as 'h pronounced with the pharyngeal passage thus constricted'. Nitinat contains only *ʔ*. Jacobsen 1969 demonstrates that the pharyngeals developed relatively recently from uvular obstruents, *ʔ* from Proto-Southern Wakashan **q̓* and **q̓ʷ*, *ḥ* from **χ* and **χʷ*. The correspondences can be seen in cognates shared by the three Southern Wakashan languages: Makah *q̓ak(ʷ)-*, Nitinat *ʔak(ʷ)-*, Nootka *ʔakʷ-* 'to whittle'; Makah *q̓ʷaƛ-*, Nitinat *ʔaƛ-*, Nootka *ʔaƛ-* 'pliable'; Makah *χačiˑ*, Nitinat *χačiˑ*, Nootka *ḥačiˑ* 'deep down'; Makah *čχʷa* 'ghost', Nitinat *čχʷa* 'dangerous animal', Nootka *čḥaˑ* 'ghost'. Makah and Nitinat are generally considered more closely related to each other than to Nootka. Jacobsen proposes that the pharyngeals developed first in Nootka, and then the stop was adopted by the neighboring Nitinat.

Northern Haida also contains a pharyngeal (Bessell 1992, 1993). Krauss (1979: 839-40) reports that uvular *ɢ* and *χ* (but not *q* or *q̓*) have become pharyngeals in the northern dialects, but with slightly different phonetic realizations: 'the fricative in Masset is like Semitic *ḥ*, but in Hydaburg it is a hoarse pharyngeal trill; the *ɢ* in Masset is like Semitic ʕ, but in Hydaburg it is an affricate, glottal stop followed by the hoarse pharyngeal trill'. Maddieson interprets the Hydaburg pharyngeal as a stop (p.c. 1998). Haida is bordered on the south by the Wakashan family, but the Haida dialects with pharyngeals are at the extreme north of the Haida-speaking area, while the Wakashan languages containing pharyngeals, Nootka and Nitinat, are at the south of the Wakashan-speaking area.

The pharyngeals of the Northwest present an intriguing areal picture. They occur within North America in only one small corner of the Northwest, in three contiguous language families: Salish, Wakashan, and Haida. Yet the languages that contain them are not contiguous; they are at the distant edges of the families, only in Interior (eastern) Salish, Southern Wakashan, and Northern Haida. Those in Wakashan and Haida have developed within recent times. Pharyngealized vowels have also been

reported in neighboring but genetically unrelated languages, the Athabaskan Chilcotin (Cook 1983, 1989, 1993) and Coast Tsimshian (Dunn & Hays 1983).

Ejectives (glottalized stops and affricates) are very common in North America. Clicks, on the other hand, do not occur. Ejectives appear in languages of the Siouan, Kiowa-Tanoan, Chumashan, Salinan, Pomoan, Maiduan, Wintuan, Palaihnihan, Shastan, Coosan, Chinookan, Sahaptian, Salishan, Chimakuan, Wakashan, Athabaskan-Eyak-Tlingit, and Tsimshianic families, as well as in Caddo, Chitimacha, Coahuilteco, Zuni, Keres, Yokuts, Lake Miwok, Wappo, Yuki, Washo, Yurok, Chimariko, Yana, Alsea, Siuslaw, Takelma, Klamath, Molala, Kutenai, and Haida. The distribution of ejectives is to some extent areal. They do not occur in languages of the Algonquian, Iroquoian, and Muskogean families of the East, but they are pervasive on the Plains and in the West. A distant relative of the Algonquian languages, Yurok, is spoken in northern California. Unlike its relatives but like its neighbors, it contains a full series of ejectives. In some languages, the origins of ejectives can be traced to sequences of plain stops followed by a glottal stop (C*ʔ*). Thus in Caddo, noun roots are bound, such as *bah-* 'blood' or *sik-* 'rock'. To be used as words, they must be followed by a noun suffix *-ʔuh*: *bahʔuh* 'blood'. When the suffix follows a root ending in an oral stop, the result is an ejective: *sik̓uh* 'rock' (Wallace Chafe p.c. 1998). Similar processes can be seen in Zuni and the Chumashan languages. Although ejectives are common, their phonetic realization varies in the relative timing of the oral and glottal releases, the strength of the burst, and the creakiness of adjacent vowels. Most glottalized obstruents are stops or affricates, but a few languages, such as Tlingit, show glottalized fricatives, which are acoustically and aerodynamically quite different (Maddieson, Bessell, & Smith 1996).

Glottalized resonants occur in languages of the Chumashan, Yokutsan, Salinan, Palaihnihan, Sahaptian, Salishan, Wakashan, and Tsimshianic families, and in Caddo, Wappo, Yuki, Yana, Klamath, Kutenai, and Masset Haida. Here, too, phonetic details vary, particularly in the timing of the glottal closure and release.

Implosive stops are rare, but they do occur in Maidu of northern California. In addition to full sets of plain and ejective stops (*p, t, c, k; p̓, t̓, c̓, k̓*), Maidu contains voiced imploded stops *ɓ* and *ɗ* (Shipley 1964: 7).

Certain surprising gaps also occur in consonant inventories in North America. Labials, once considered universal, are noticeably absent from several unrelated languages. Both of the inventories cited at the outset, Mohawk (along with its relatives) and Tlingit (along with its relatives) lack labials, though they do show labio-velars. Tillamook, a Salishan language of Oregon separated from its relatives by Athabaskan languages, has lost all labials. Proto-Salish **p* and **p̓* became Tillamook *ḥ*, and **m* became *w*. Thompson & Thompson note that this *w* has little lip-rounding, so should not be considered a labial (1971: 316). Proto-Salish **p*, **p̓*, and **m* appear

as *č*, *č̓*, and *ŋ* in Straits Salish of the British Columbia Coast (Nater 1990).

Velar stops are often assumed to be universal, but in a number of languages of the Northwest Coast, velars have been fronted to palatalized velars or even palatal affricates, leaving a gap: there is no plain *k*. Such shifts can be seen in languages from as far north as Kwakwala (Wakashan), in Coast Salishan languages, to as far south as Hupa (Athabaskan) in California (Thompson 1979: 703, Gordon 1996).

Nasals have also sometimes been assumed to be universal, but languages in three geographically contiguous families on the Northwest Coast lack nasals: Twana and Lushootseed of the Salishan family; Quileute (but not Chemakum) of the Chimakuan family; and Makah and Nitinat of the Wakashan family. In each of these languages, nasals **m*, **n* shifted to voiced stops *b*, *d* within the nineteenth century. The processes involved in these shifts are discussed in Thompson & Thompson 1972, Kinkade 1985b, and N. Thompson 1993.

1.2 Transcription conventions

A variety of transcription systems have been used over the history of documentation of North American languages. Some diversity persists across the languages today.

Developing accurate written representations of the languages proved to be a challenge from the beginning. Early explorers, missionaries, and colonists encountered sounds that simply did not exist in the European languages they knew. Some were not written because they were simply not noticed. Others were represented by letters or combinations of letters used for the closest sounds in European languages, with varying degrees of success. Sometimes the values of the letters can be recovered, but sometimes not, particularly when the languages are no longer spoken. Other difficulties were presented by the fact that the languages contained phonetic distinctions that were not significant in the languages of the scribes, so they were not marked.

During the nineteenth century, as more scholars began to compare languages, efforts were turned to the standardization of transcription practices. Early proposals appear in Pickering 1820 and Cass 1821. When the Smithsonian Institution undertook more concentrated documentation of the languages, they equipped researchers with questionnaires to guide their work. Included with early questionnaires were instructions for transcription devised by the linguist William Dwight Whitney (Gibbs 1861, 1863, 1865). Whitney expanded his system for Powell's 1877 *Introduction to the study of Indian languages*, and then Powell revised it for his 1880 edition. During the same period similar efforts were being made in Europe with the formation of the International Phonetics Association. Among its goals was the development of a standardized system that could be used by linguists for any language, an International Phonetic Alphabet.

Many of the conventions originally established by the Americanists and the IPA were the same. Each system continued to evolve as more was discovered about the phonetic distinctions occurring in languages of the world. Within the Americanist tradition some adjustments to the Powell system were made by Franz Boas in his introduction to the *Handbook of American Indian languages* (1911: 18-23). In 1912 the American Anthropological Association established a Committee on Phonetic Transcription of Indian Languages, with Boas as chair and committee members P.E. Goddard, A.L. Kroeber, Edward Sapir, and J.P. Harrington. (Harrington was later removed because he was not a member of the AAA.) The committee published its report in 1916 as *Smithsonian miscellaneous collections* 66.6. (Correspondence among the members over drafts of the document appears in Golla 1984a: 425-48.) The committee proposed two systems, a relatively simple one designed for the recording and printing of texts, and a more elaborate one for specialists interested in the phonetic details of the language under study. The first was ultimately used more widely than the second. In 1934 Sapir and six of his students proposed several refinements to the 1916 system, substituting unitary symbols for certain digraphs chosen earlier to represent single sounds (*kʷ* for *kw*, *c* for *ts*, *ƛ* for *tl*); *š* for the palatal sibilant (earlier *c*); and *ʔ* for glottal stop.

A transcription key can be found on page xiii comparing the transcription conventions recommended by Powell for the BAE, by Boas for his *Handbook of American Indian languages*, by the Committee on Phonetic Transcription of the AAA 1916, by Sapir and his students in 1934, by Ives Goddard for the *Handbook of North American Indians* in 1996, and by the IPA. It is based in part on the Comparison of Phonetic Alphabets compiled by Goddard for Volume 17 of the *Handbook* (1996b:12-16). A key to Sapir's use of phonetic symbols over his career appears in Bright 1990.

Americanist conventions are now widely used in the transcription of North American languages, but they are not uniform, due in part to the practical challenges presented by the different languages. Scholarly traditions have also evolved for work on particular languages and language families. Algonquianists, for example, tend to indicate vowel length with a macron over the vowel (*ā*) rather than a raised dot or colon after it (*a·*, *a:*). In addition, many local communities in North America have now developed practical orthographies for their languages, often in cooperation with linguists. Community orthographies must not only reflect distinctions inherent in the language. They must also be easy to learn, which often means exploiting existing literacy skills: thus voiceless unaspirated stops *p*, *t*, *k* are sometimes written *b*, *d*, *g* because they sound closer to the sounds represented by those letters in English. Community orthographies must be easy to produce on a typewriter or computer: thus the sibilant written *š* in the Americanist system and *ʃ* in IPA is sometimes written as a digraph *sh*. They must also be aesthetically pleasing to their users: the

glottal stop is often written with an apostrophe ', which looks less like a question mark than ʔ. In some cases there has been a desire to continue historic traditions insofar as possible, such as those originally devised for Bible translations. Nasalized vowels are thus sometimes written as sequences of vowels plus *n* (*en*, *on*), as they were by early French missionaries, rather than with hooks or tildes (*ę*, *ą̄*).

Given the variety in transcription conventions used for the different languages, and even for individual languages over their history of documentation, two possible directions could be taken in a work such as this: 1) an attempt could be made to regularize the transcription of all material cited, or 2) the material could be presented in its original form. There are advantages and disadvantages to both alternatives. With regularization, material is often more easily interpreted. It is not always possible, however, to know just what was meant by earlier transcriptions. Particularly in the case of older materials, regularization can obscure the level of detail and the quality of the original transcription, as well as obliterate evidence for possible alternative interpretations. Accurate regularization would require a thorough analysis of the distinctions inherent in the language, a task that is not possible for some languages. With more recent materials, such as those written in community orthographies, altering familiar conventional practices would introduce confusion of a different kind. For these reasons, material is usually cited here in the form of its source. Where phonetic information is pertinent and the values of original symbols can be determined, Americanist equivalents are given with a note to that effect.

Because of the diversity of orthographic practices in the literature, it can be useful to look through grammars, texts, and dictionaries for a phonetic key, in which the author specifies the conventions used. Another resource is the phonetic symbol guide in Pullum & Ladusaw 1986. Further information about the conventions used in the transcription of specific American languages is in the Catalogue in Part II.

1.3 Syllable structure

The languages vary considerably in the complexity of their syllable structures. Many show simple structure, such as Chukchansi Yokuts with the syllable canon CV(C), as in *te·yaw min tʰaxna, naʔ ćalitʰ pila·suʔun* 'Before you came, I broke the plate' (Collord 1968: 86). Others show quite complex structures, even allowing sentences without vowels, such as Bella Coola (Salishan) *xɬpx̓ʷɬɬpɬs kʷć* 'Then he had had in his possession a bunchberry plant' (Bagemihl 1991a: 16). Bagemihl notes that there are no phonological or phonetic epenthetic vowels in such sequences.

These structures raise interesting questions about the nature of syllable structure. A word like *ćktskʷć* 'he arrived' could be analyzed as having no syllables (since it has no vowels), or up to 5 or 6, depending on whether obstruents are considered syllabic and whether all consonants are analyzed as part of the syllable. Salishan syllables are discussed in Newman 1947, Hoard 1978a, Bagemihl 1991a,b, 1998, Bates & Carlson 1992, 1997, Cook 1994, Jimmie 1994, Willett & Czaykowska-Higgins 1995, Bianco 1996, Czaykowska-Higgins & Willet 1997, and elsewhere.

Voiceless syllables occur in several contexts. In some languages, syllables are systematically devoiced phrase-finally, as in Oneida, a Northern Iroquoian language of Ontario and Wisconsin: *lotoláthu̥* 'he has gone hunting'. In Zuni, a language isolate of New Mexico, final vowels are devoiced after nasals or aspirates.

In some other languages, medial syllables are devoiced through regressive assimilation of voicelessness from a coda. In Cayuga, a Northern Iroquoian language of Ontario, the devoicing associated with *h* codas spreads leftward through odd-numbered syllables (counted from the beginning of the word): *kɨ̥hsa·s* 'I am searching' (but *akíhsa·s* 'she is searching'); *akę̥ną̥háothraʔ* 'my hat' (but *anaháothraʔ* 'hat'). The devoicing does not occur in syllables with a laryngeal onset: *hihsa·s* 'he is searching'. This alternating pattern is linked to an alternating secondary stress pattern in the language. Its acoustic effects are described in Doherty 1993. In Cheyenne, an Algic language of Montana and Oklahoma, phrase-final syllables are devoiced much as in Oneida. Prepenultimate low-pitched vowels are also devoiced before a voiceless fricative: *mą̥hnǫ̥htsę̥stovǫ̥sę̥ǫ* 'when you ask him'. High-pitched vowels are devoiced as well before a voiceless fricative that is both preceded and followed by another high-pitched vowel, not necessarily adjacent: *násáàháónétsę̥stą̥hémę̥* 'we (exclusive) are not lazy' (/násáàháónétéhtáhémé/). As in Cayuga, the devoicing does not occur after *h*: *hohkǫ̥ę* 'ax' (/hòhkòš/) (Leman & Rhodes 1978).

In the Keresan dialects of New Mexico, unstressed final syllables with voiceless onsets are devoiced: Acoma *sḱáašų̥* 'fish', *yûusɨ̥* 'God' (Miller 1965: 16-7). The voicelessness is assimilated regressively (leftward) through voiceless consonants into posttonic syllables: *ćápi̥pi̥pɨ̥* 'it is spotted', *kápǫ̥pi̥i̥šɨ̥* 'thick'. If the syllable onset is a sonorant or glottal stop, the devoicing is optional (indicated by underscoring): *kawâyu̥* 'horse', *kusêeʔe̥* 'hair', *gáẃi̥cɨ̥* 'seeds', *sínąni̥* 'skin', *sénâaʔḁšɨ̥* 'my arch'. (The sonorant is also optionally devoiced.) If the onset is a glottalized consonant, the syllable is optionally devoiced: *sîuk̓u̥si̥cǫ* 'I limp'. (Miller writes plain, unaspirated stops and affricates as *b*, *d*, *dy*, *g*; *z*, *ž*, *ʒ* and aspirated stops and affricates *p*, *t*, *ty*, *k*; *c*, *č*, *ç*.)

Languages of the Numic branch of the Uto-Aztecan family also show syllable devoicing, in some cases under fairly complex conditions arising from certain earlier syllable structures. In a lucid account, Charney (1993, section 2.1) describes devoicing processes in Comanche, some still productive, others not. Short, unstressed vowels are optionally devoiced phrase-finally (*uvaʔat i̥*̥ 'on him') and before *s* or *h* (*sit i̥*̥*se* 'that one', *wekwɨ̥huupit i̥*̥ 'they went in'). Original geminate stops became hC clusters, devoicing preceding short, unstressed vowels (*pop i̥*̥*tsi* 'jump' from **póHpi-htsi*); some

of the hC clusters then evolved into voiceless spirants (*nokǫvinnitɨ* 'baking bread' from **nóHko-hpinni-ti*). Comanche devoicing is also discussed in Canonge 1957, Jakobson 1967, and Armagost 1985a, 1986. Additional discussion of devoicing in Numic languages can be found in grammars and in Harms 1966, 1985 and Goss 1970.

Several languages have moved a step beyond the alternating devoicing of languages like Cayuga. Especially well known are Tonkawa, an isolate of Texas, and some of the Algonquian languages, such as Potawatomi and Shawnee. In Tonkawa stems, certain even-numbered syllables are reduced by one mora. Syllables of basic shapes CV, CV·, CV·C, C'V·, and C'V·C appear as C·, CV, CVC, C'V, and C'VC respectively. (CVC, C'V, and C'VC remain constant.) Alternations can be seen in stems underscored in the following words: *yad·c(a)-o?c* 'I stab him', *ge-idac-o?* 'he stabs me'; *na·d-o?c* 'I step on it', *ge-nad-o?* 'he steps on me'; *c'e·d-o?c* 'I cut him', *ge-c'ed-?* 'he cuts me'; *co·gb-o?* 'he swells up', *ge-cobg-?* 'I swell up'; *m'e·dn-o?* 'lightning strikes him', *ge-m'edn-o?* 'lightning strikes me' (Hoijer 1931: 4-15).

Glottalization may be assimilated through syllables as well. A process similar to the one that spreads voicelessness in Cayuga leftward through odd-numbered syllables spreads glottalization in the same context: *ahónʔákhwęh* 'he got angry' (but *honáʔkhwęʔǫh* 'he is angry'). The process does not operate in final syllables or syllables with laryngeal onsets: *atáhʔthraʔ* 'socks', *akatęhtíʔthraʔ* 'my socks'. In Caddo, glottalization of sonorants extends through full syllables. If a syllable begins and ends with a sonorant, either both must be plain, or both glottalized: *wʔáʔtiʔ* 'all', *ʔáwʔciʔ* 'bear', but *híyáybah* 'if she sees'. Obstruents do not participate in the pattern, neither stimulating glottalization of resonants (*cʔíwʔkas* 'star', *ʔánʔkuh* 'pipe'), nor assimilating it from them: *káwʔnih* 'first'. The glottalization extends only over single syllables: *ʔáydaʔ* 'worm' (Wallace Chafe p.c. 1998).

1.4 Tone

A number of North American languages exhibit contrastive tone. In some languages, such as those of the Kiowa-Tanoan family, every syllable carries distinctive tone. Three tones can be seen in Rio Grande Tewa, of northern New Mexico: high (*pʔó:* 'moon'), low (*pʔò:* 'water'), and gliding (*pʔô:* 'road') (Spiers 1966: 71-2). Every syllable carries one: *wírímûʔpí* 'I didn't see it', *wínàwé:màe:pí* 'he didn't go back' (1966: 127). In other languages, distinctive tone, sometimes termed 'pitch accent' occurs on only one syllable per word, usually the stressed syllable. In Mohawk, stress is penultimate. (Epenthetic vowels do not enter into the determination of stress.) A long, stressed syllable may show rising or falling tone: *oká:raʔ* 'story', *okà:raʔ* 'eye'.

Most tone systems have developed relatively recently. Achumawi, a Palaihnihan language of northern California, shows distinctive tone on every syllable (de Angulo 1930: 80), but its only close relative, Atsugewi, shows no tone contrasts at all (Talmy 1972). Tone has developed in just one Salishan language, Upriver Halkomelem of coastal British Columbia (Galloway 1993: 38-42). Most Algonquian languages do not distinguish tone, but three of them, Arapaho of Wyoming (Salzmann 1963), Cheyenne of Montana and Oklahoma, and Kickapoo of Oklahoma and Mexico have each developed tone independently, through different processes. The Cheyenne system can be traced to a shift of Proto-Algonquian vowel length to high pitch, plus subsequent tone sandhi processes (Frantz 1972, Leman & Rhodes 1978, Leman 1981). Incipient tonal contrasts have been noted in another Algonquian language, Montagnais, where high tone is triggered by vowel length or a following glottal stop (Martin 1980, Cowan 1983). The Siouan languages do not generally show tone, but Crow, a Siouan language of Montana, has developed salient tonal differences that are still predictable from stress and vowel length (Kashube 1957, 1967, Hamp 1958, Matthews 1959, Gordon 1972, Graczyk 1991: 44-5). Tone has also developed within the Dhegiha branch of Siouan.

A surprising number of tone systems have come into being through the same process: low tone has developed from vowel constriction before a laryngeal element. In Mohawk, when the stress occurs on a syllable closed by glottal stop, a falling tone results and the glottal stop disappears, leaving behind length and sometimes creakiness on the vowel: *oyà:taʔ* 'body' (**oyáʔtaʔ*), *kyaʔtà:ke* 'on my body' (**kyaʔtáʔke*). In stressed syllables closed with *h*, the *h* also results in falling tone before it disappears, provided it is followed by a sonorant: *owì:raʔ* 'scar' (**owíhraʔ* vs *owí:raʔ* from **owí:raʔ* 'baby'). Oneida shares this innovation. Strikingly similar developments of falling tone before a laryngeal can be seen in Caddo, of Oklahoma (Wallace Chafe p.c. 1998), in Keres of New Mexico (Miller 1964: 17-8), in some Third Mesa dialects of Hopi, a Uto-Aztecan language of Arizona (Manaster Ramer 1986), in Takelma, an isolate of southwestern Oregon (Sapir 1922: 20), in Quileute, a Chimakuan language of northwestern Washington (Andrade 1933, Hoard 1993), in Bella Bella Heiltsuk, a Wakashan language of British Columbia (Rath 1986, Wilson 1987), in Coast Tsimshian of British Columbia (Sasama 1997), and in the Sanya-Henya Tlingit dialects of southeastern Alaska (Leer 1991: 12-18). Cherokee, a Southern Iroquoian language, shows an independent, more complex development of tone from laryngeals, no longer recoverable from alternations within the language. The distinctive tone appears in the Cherokee dialects of Oklahoma but not North Carolina. The Algonquian language Kickapoo developed low tone in syllables that formerly ended in *h*. Due to sound change and generalization, low tone now appears before all spirants (Voorhis 1967, 1974 Gathercole 1983). In the Kiowa-Tanoan languages, which show an older tone system, the lowering effect of a glottal coda on tone can still be seen. The recurrence of this pattern in so many genetically and geographically separate languages is surprising in light of a general assumption

emerging from work with languages of Asia that a glottal stop leads to high tone on a preceding vowel (Hombert, Ohala, & Ewan 1979). It has been postulated that a glottal stop alone may raise the tone of a preceding vowel, but that the laryngeal constriction on vowels that can be induced by a glottal stop may lower tone.

Interesting developments have occurred in the Athabaskan languages. Proto-Athabaskan can be reconstructed without tone, and some of the daughter languages show this pattern today, including Ingalilk, Holikachuk, Koyukon, Kolchan, Tanaina, Ahtna, Tagish, Tsetsaut, and Babine, as well as the Pacific Athabaskan languages. Many of the modern languages now show two contrastive tones, but often in almost mirror-image patterns: where one language shows high tone, another shows low, and vice-versa. The divergence may have developed in the following way. In some of the languages, vowels followed by glottal stop assimilated the laryngeal constriction. In others, the constriction lowered the tone, just as in Mohawk above. These languages include Lower Tanana, Kutchin, Han, Upper Tanana, Southern Tutchone, Dogrib, Tahltan, Sekani, Sarcee, Chilcotin, and the Apachean languages of the Southwest. In still other Athabaskan languages, vowels followed by glottal stop received high tone: Tanacross, Northern Tutchone, Kaska, Hare, Slave, Mountain, Bearlake, Beaver and Chipewyan (Krauss & Golla 1981: 69-71, Cook & Rice 1989: 9-11). Thus Cook & Rice note (1989: 11) that Proto-Athabaskan **-ta?* 'water' yielded Hupa *-ta?* (without tone), Sarcee *-tò* (with low marked tone), and Chipewyan *-tá* (with high marked tone). Syllables not originally ending in glottal stop retain unmarked tone: Hupa *-tsow* 'yellow', Sarcee *-tsúú* (unmarked high tone), Chipewyan *-tθòɣ* (unmarked low tone) (Hoijer 1963: 3). In some of the languages, the glottals that triggered the process and/or the constriction remain, while in others they have disappeared. The distribution of the tone-less, high-toned, and low-toned languages is not purely areal. Sekani shows low tone, unlike all of its neighbors except Tahltan; Tanacross shows high tone, again in contrast with its neighbors. The distribution also does not follow genetic divisions perfectly. The Southern Tutchone dialect shows low tone, while Northern Tutchone shows high; the Tagish and Tahltan dialects show low tone, while Kaska shows high.

1.5 Harmony

Patterns of both vowel and consonant harmony can be found in North America. One of the most extensively discussed vowel harmony systems is in Nez Perce, a Sahaptian language of Idaho, Washington, and Oregon. The system was noted by Morvillo (1891: 121), Boas (1929: 1), Phinney (1934: xi), Velton (1943: 274), and Rigsby (1965a: 309), then described in more detail by Aoki (1966a, 1970).

Nez Perce contains 5 distinctive vowels: *i, e, a, o, u*. The vowels fall into two series, a regressive series *i, e, u*, and a dominant series *i, a, o*. Within a word all vowels

belong to the same series, either recessive as in *peté?wyeniku?* 'we are going to settle down to live' or dominant as in *pawsayná·ko?qa* 'we could go in' (Aoki 1970: 114-5). The presence of a basically dominant vowel anywhere in a word causes any recessive vowels in the word to shift to their dominant counterparts. This effect can be seen by comparing verbs based on the recessive stem *wé·yik* 'go across' with different tense suffixes: *wé·yik-se* '(I) am going across', *wé·yik-sene* '(I) went across long ago', *weyewé·yik-sene* '(I) hurried across long ago', but *wá·yik-saqa* '(I) went across recently', *wayawá·yik-saqa* '(I) hurried across recently' (Aoki 1966a: 760).

The vowel *i* belongs to both series, but it is not neutral. Some occurrences of *i* are recessive, while others are dominant, triggering a shift of recessive vowels in the domain to dominant. The *i* of the inceptive suffix *-í·k* is recessive: *pinúm-se* 'I am asleep', *pinm-í·k-se* 'I am going to sleep'. That of the suffix *-liwaq* 'in vain' is dominant: *?é·yɨ́s* 'be happy', *?áyɨ́s-liwaq-sa* 'I was happy for nothing' (Aoki 1970: 99).

The Nez Perce system prompted considerable discussion of formal devices for describing harmony and the phonetic features that alternate (Zimmer 1967, Chomsky & Halle 1968: 377-8, Jacobsen 1968, Kiparsky 1968, Zwicky 1971, Kim 1978, and Hall & Hall 1980). As might be suspected, the harmony provides a hint about an earlier stage of the language: modern *i* represents the merger of two earlier vowels, **i* and **ə*. Rigsby & Silverstein 1969 provide evidence for the reconstruction of the six-vowel system with harmony for Proto-Sahaptian from the sister language Sahaptin. There vowel harmony must have preceded a palatalization. In all dialects of the modern language except Palouse, which is adjacent to Nez Perce, there are now only three vowels. Variant forms of certain morphemes point to earlier harmony however, such as the allative and ablative suffixes *-kan/-čan* and *-kni/-čni*.

Another harmony system involves retracted vowels, triggered by back consonants. In the Interior Salishan languages, what have been termed 'faucal' consonants, that is pharyngeals, uvulars, and retracted *r* (but not laryngeals), have a lowering or retracting effect on preceding vowels (Mattina 1979, Remnant 1990, Shahin 1995, Bessell 1998). In some of the languages, the vowel retraction is anticipated from the beginning of the word, resulting in regressive vowel harmony. The harmony has been discussed most extensively for Coeur d'Alene, an Interior language of Idaho (Reichard 1938, Cole 1987: 77-103, Johnson 1975, Sloat 1966, 1971a,b, 1980, Bessell & Czaykowska-Higgins 1992, Doak 1992, Bessell 1997a,b, Fitzgerald 1997). (Additional pertinent historical discussion is in Kinkade & Sloat 1972.) The vowel inventory is *i, ɛ, a, ɔ, u* plus nonphonemic *ə*, the result of unstressed vowel reduction and epenthesis. All of the vowels occur in roots. The faucal consonants are the uvulars *q, q̓, qʷ, q̓ʷ, χ, χʷ*, the pharyngeals are *ʕ, ʕ̓, ʕʷ, ʕ̓ʷ*, and the retracted apicals are *r, r̓*. The retracting effect of the faucal consonants can be seen by comparing the underscored roots in (1).

(1) COEUR D'ALENE REGRESSIVE RETRACTING VOWEL HARMONY — Doak 1992: 3-4

a.	*cíš-t*	'it is long'	*i/ɛ*
	cɛš-alqʷ	'he is tall'	
b.	*qʷic-t*	'warm'	*i/a*
	qʷác-qən	'hat'	
c.	*xɛc-p*	'he became curious'	*ɛ/a*
	t-xác-xəc-us	'he has curious eyes'	
d.	*s-tpúm-əlxʷ*	'hide with fur'	*u/ɔ*
	s-pɔ́m-alqs	'fur coat'	

As in Nez Perce, *i* shows two alternations, *i/ɛ* and *i/a*. The choice is not predictable from context, but it is consistent for any morpheme. The vowel in *cis* of (1)a, for example, consistently retracts to *ɛ*, while that in *qʷic* of (1)b always retracts to *a*.

Some roots contain vowels *a* and *ɔ* that are not the result of harmony with a following faucal, such as *ɬáp* 'shoot' and *pɔ́c̓* 'crush'. These low back vowels have a retracting effect on all following stressed vowels in the word, stimulating a progressive faucal harmony. Here too *i* shows two patterns, again the result of a merger.

(2) COEUR D'ALENE PROGRESSIVE HARMONY — Doak 1992: 4

a.	*s-n-miy-ɛp-čínt*	'telling on somebody'	*í/ɛ́*
	ɬap-s-čɛ́nt	'he shot (people)'	
b.	*n-caq-útkʷɛʔ*	'he put it in the water'	*í/á*
	n-mas+mas-átkʷɛʔ	'water is full of masmas' (a plant)	

Fitzgerald (1997) shows how the system can be explained by comparing the modern Interior languages and tracing the historical development of the processes.

Vowel harmony can be seen in a number of other North American languages, including Coos, Takelma, Utian, Maiduan, and Yokutsan.

Patterns of consonant harmony can be seen in the Chumashan and Athabaskan families, families that are areally and genetically unrelated. Chumash sibilant harmony is discussed in Beeler 1970, Harrington 1974, Poser 1982, Steriade 1987, Shaw 1991, and Mithun 1997a. The system is illustrated here with Barbareño examples from Harrington's fieldnotes recorded with speaker Luisa Ignacio, cited in Mithun 1997a. Barbareño alveolar sibilants *s, sʰ, c, cʰ, c̓* contrast with palatal sibilants *š, šʰ, č, čʰ, č̓*, as in *slow̓* 'eagle' versus *šlow̓* 'goal line'. Stems show consistent harmony.

(3) BARBAREÑO CHUMASH SIBILIANT HARMONY IN STEMS — Harrington in Mithun 1997: 222

sqoyis	'kelp'	*šošo*	'flying squirrel'
c̓axs	'scum'	*čʰumaš*	'Santa Cruz Islander'
swoʔs	'feather ornament'	*c̓muyaš*	'escurpe' (a fish)

The dynamism of the process can be seen by comparing morphologically complex words. Some affixes contain basic alveolar sibilants, listed in the left-hand column of (4), and some basic palatal sibilants, listed on the right. (The basic forms of morphemes can be determined from words without other sibilants.)

(4) BARBAREÑO PREFIXES WITH SIBILANTS

s-	3RD PERSON SUBJECT	*iš-*	DUAL SUBJECT
saʔ-	FUTURE	*ič-*	ASSOCIATIVE
su-	CAUSATIVE	*uš-*	'with the hand'
sili-	DESIDERATIVE		

(5) BARBAREÑO SUFFIXES WITH SIBILANTS

-us	3.SG.BENEFACTIVE	*-šiš/-šaš*	REFLECTIVE/RECIPROCAL
		-Vč	'affected by'
		-Vš	RESULTATIVE
		-š	IMPERFECTIVE
		(i)-waš	PAST

Either kind of sibilant triggers harmony in any sibilant to its left within a word. The process affects roots and affixes alike. (Gemination yields aspirated obstruents: *s* + *s* > *sʰ*.)

(6) BARBAREÑO REGRESSIVE SIBILANT HARMONY — Harrington in Mithun 1997: 223-4

a.	*ṣiniwe*	*ṣinwešiš*
	ṣ-iniwe	*ṣ-iniwe-šiš*
	3-kill	3-kill-REFLEXIVE
	'he killed (it)'	'he killed himself'
b.	*kṣaʔtiwoliʔlay*	*kšaʔtiwoliʔlayič*
	k-ṣaʔ-tiwoliʔlay	*k-ṣaʔ-tiwoliʔlayi-n-š*
	1-FUTURE-FLUTE	1-FUTURE-FLUTE-VERBALIZER-IMPERFECTIVE
	'I will play the flute'	'I am going to play the flute'

c.	*ksaʔsukuy*	*šʰukuyaš*
	k-saʔ-su-kuy	*s-su-kuy-aš*
	1-FUTURE-CAUSATIVE-boil	3-CAUSATIVE-boil-RESULTATIVE
	'I am going to boil it'	'boiled islay'

The Athabaskan languages show slightly different harmony patterns. An intricate system can be seen in Tahltan, an Athabaskan language of northern British Columbia discussed in Nater 1989 and Shaw 1991. Here there are three series of coronal spirants (termed the *dð*, *dz*, and *dž* series), each with five members.

(7) TAHLTAN CORONALS — Shaw 1991: 144

I	II	III
dð	*dz*	*dž*
tθ	*ts*	*tš*
tθ'	*ts'*	*tš'*
ð	*z*	*ž*
θ	*s*	*š*

If any coronal spirant appears in a word, all coronal spirants to its left must belong to the same series. There is thus regressive harmony of point of articulation. The effect of the harmony can be seen in the shifting form of the first person subject prefix 'I', whose basic shape is *s-*.

(8) TAHLTAN REGRESSIVE CORONAL HARMONY — Shaw 1991: 144-5

θɛθðɛɬ	'I'm hot'	*hudištša*	'I love them'
maθtθ'ɛt	'I fell off (horse)'	*ɛšdžɯni*	'I'm singing'
ɛθdu:θ	'I whipped him'	*łɛnɛštšu:š*	'I'm folding it'
ɛsk'a:	'I'm gutting fish'		
nadedɛ sba:tɬ	'I hung myself'		
nɛsteɬ	'I'm sleepy'		

As can be seen, intervening coronals of the *d* stop series (*d, t, t'*) or the *dl* lateral series (*dl, tɬ, tɬ', ɬ, l*) are transparent to the process and are unaffected by it.

1.6 Sound symbolism

In some languages, particularly of the West, certain sounds or sound shifts are associated with specific meanings, most often size or intensity. Sound symbolism in the Wishram dialect of Upper Chinook is described by Sapir in Boas' sketch of the language (1911b: 638). For a diminutive effect, plain stops and affricates may be made ejective, and/or the point of articulation may be moved forward, with uvulars fronted to velars and alveo-palatals fronted to alveolars. (Symbols are standardized.)

(9) WISHRAM CHINOOK DIMINUTIVE PROCESSES — Sapir 1911a: 638-9

GLOTTALIZATION

b, p	->	*p'*
d, t	->	*t'*
c	->	*c'*
g,k	->	*k'*

FRONTING

g, q	->	*ǩ*	*š*	->	*s, c*
q'	->	*ǩ*	*č*	->	*c*
qx	->	*kx*	*č'*	->	*c'*
x	->	*x*			

Usually all eligible consonants within a word are affected, except that final stops do not shift. Sapir notes that diminutive forms of body-part terms would be used for those of a small child. Diminutive forms may also have special meanings of their own, as in the case of 'grasshopper' and 'file'. The prefixes are gender markers.

(10) WISHRAM DIMINUTIVE SYMBOLISM — Sapir 1911a: 639-41

i-míšt	'lips'	*i-míst*	'little lips'
a-ckén	'shoulder'	*a-tsǩén*	'little shoulder'
i-kxáč	'tooth'	*i-ǩác*	'little tooth'
i-šgúlukš	'wolf'	*iɬ-sǩúluks*	'newborn wolf cub'
i-čálaq	'cricket'	*i-c'úlaq*	'grasshopper'
a-čála	'grindstone'	*a-cála*	'file'

As in many languages, diminutives often signal endearment and appear in kin terms.

(11) WISHRAM DIMINUTIVE SYMBOLISM IN KIN TERMS — Sapir 1911a: 642

gáš-u	'man's son's child' (VOC)	*-ǩáš-u-š*	'paternal grandfather'
gág-u	'man's daughter's child' (VOC)	*-gáǩ-u-š*	'maternal grandfather'

Some basic terms are already diminutive, such as *i-p'ąqxa* 'flat-headed', not surprising since, as Sapir notes, headflattening was customarily practiced on infants.

Diminutive forms may be further diminutivized. The term *iɬ-ǩáš-kaš* 'child' is already a partly diminutivized word built on the root *-kaš*. It is further diminutivized in *iɬ-ǩáskas* 'little child, baby'. .

There are also consonant shifts with an augmentative effect. Stops may be laxed or voiced, and alveolars shifted back to alveo-palatals. Velars show no change.

(12) WISHRAM AUGMENTATIVE PROCESSES — Sapir 1911a: 638-9

LENITION, VOICING

p, p̓	->	*b*
t, t̓	->	*d*
k, k̓	->	*g*
q, q̓	->	*ɢ*

BACKING

č	->	*ǰ*
c̓	->	*ǰ̓*
s	->	*š*
c	->	*č, ǰ*
c̓	->	*c̓, ǰ̓*

(13) WISHRAM AUGMENTATIVE SYMBOLISM — Sapir 1911a: 640-1

i-mɛlɛxtk̓úlamat	'tongue'	*i-mɛlɛxtgúlamat*	'large tongue'
i-q̓áqštaq	'head'	*i-gáqštaq*	'large head'
i-k̓álamat	'stone'	*i-gálamat*	'large stone'
a-k̓ámunaq	'fir'	*a-gámunaq*	'large fir'

Augmentatives can also have a 'connotatively negatively valued, embarrassing, and otherwise inherently pejorative' meaning (Silverstein 1994: 51).

Some terms have both diminutive and augmentative forms.

(14) WISHRAM DIMINUTIVES AND AUGMENTATIVES — Sapir 1911a: 640

a-q̓óxɬ	'knee'	*a-k̓úxɬ*	'little knee'	*a-góxɬ*	'large knee'
i-c̓au	'snake'	*i-íau*	'little snake'	*i-ǰíau*	'large snake'
i-c̓ákcik	'wagon'	*is-c̓íkcik*	'buggy'	*i-ǰíkǰik*	'heavy truck'

All parts of speech may show consonant symbolism. Diminutive verbs are in (15).

(15) WISHRAM DIMINUTIVE VERBS — Sapir 1911a: 643

čiš	'cold'	*(c̓únus) a-icá:s*	'just (a little) cool'
gut	'break up earth by digging'	*k̓útkut*	'to pluck'

An example of an adverb with consonant symbolism is *c̓únus* 'a little'. Consonant symbolism also appears in affixes. The suffix *-ba* 'out', for example, has a diminutive counterpart *-p̓a* 'slightly out (of position)': *ayulap̓áč̓guxwida* 'it will tilt up'.

Lakhota, a Siouan language of the Plains, shows patterns of consonant alternations in vocabulary that correspond to degrees of intensity. Here, the point of articulation of fricatives moves back from alveolar (*s,z*) to alveo-palatal (*š,ž*) and to velar (*x,ɣ*) to indicate increasing intensity. (Not all possible forms exist in the lexicon.)

(16) LAKHOTA SOUND SYMBOLISM — Boas & Deloria 1939: 16-8

sóta	'it is clear'	*zí*	'it is yellow'
šóta	'it is hazy, smoky, muddy'	*ží*	'it is tawny'
xóta	'it is grey'	*ɣí*	'it is brown'
-mnuza	'it gives a crunching sound, as snow or something easily broken'		
-mnuža	'the same with more resistance'		
-mnuɣa	'the same for hard objects, shells, bone, corn chewed by horses'		
-nuza	'it is soft and movable, like an enlarged gland under the skin'		
-núža	'the same, but harder, like cartilage'		
-núɣa	'hard, like callus on a bone, a gnarl on a tree'		
-suza	'it has a slight bruise, a single crack in a bone'		
-šuža	'it is badly bruised, flesh and bone are crushed together'		
-xuɣa	'a hard round shell (egg, skull) is fractured'		

In some languages the consonant shifts appear in conjunction with an affix, like the Wiyot diminutive *-o·c* and augmentative *-ačk*: *ṯawípaʔlił* 'rope', *c̲awípaʔroł-o·c̲* 'twine', *č̲awípaʔroł-ač̲k* 'heavy cable' (Teeter 1959: 41). (*t,s,l* > DIM *c,š,r* > AUG *č,š,r*).

Additional descriptions of symbolism are in Langdon 1971 on Yuman languages, Gamble 1975 on Yokuts, Hymes 1992 on Chinookan, Aoki 1994a on Sahaptian, and sources listed in Nichols 1971. Nichols presents a synthesis of diminutive consonant symbolism in the West, grouping the processes into three types: hardening, tonality, and dental. Hardening includes glottalization and shifts of fricatives to affricates (*s* > *c* in Wishram, Northern Paiute, Nez Perce, *θ* > *č* in Karok, *s* > *č* in Southern Sierra Miwok, *s* > *k* in Coos, and *w* > *b* in Hupa). Her tonality refers to the pitch of obstruents in shifts of alveo-palatals to alveolars and uvulars to velars (Wishram, Lower Chinook, Lakhota, Nootka, Cree, Sahaptin, Nez Perce, Coeur d'Alene, Tillamook, Karuk, Wiyot, Yurok, Hupa, Southern Sierra Miwok, Luiseño, Cocopa, Diegueño). Dental shifts involve resonants (*l* > *r* in Yurok and Wiyot, *r* > *n* in Karok, *l* > *n* in Yana, *r* > *ð* in Luiseño, *ɬ* > *l* and *ɬʸ* > *lʸ* in Diegueño, *n* > *l* in Sahaptin and Nez Perce). Nichols proposes that such patterns would not arise easily from internal causes and are probably the result of widespread borrowing. Haas 1970 had noted the distribution of consonant symbolism among the genetically unrelated Wiyot, Karok, and Hupa in Northern California. Symbolic glottalization is found in the north, in Chinookan, Salishan, and Wakashan, while dental shifts are centered to the south, from Mexico to Oregon and into Idaho. Nez Perce, Northern Paiute, and Southern Sierra Miwok, form a continuum of unrelated languages shifting *s* to *c*.

1.7 Native writing systems

Before contact, few groups in North America felt the need to write. Oral traditions were strong, and communities were often so small that communication could always take place face-to-face. At present, many if not most communities have developed orthographies for their traditional languages, though the place of this writing in daily life varies. Surveys of North American writing systems are in Walker 1981, 1996.

Symbolic systems have been used in North America for centuries, in such forms as pictographs on hides or bark, petroglyphs on rock, strings of wampum beads, and notched sticks. They have served as records of events and covenants, as trail and territory markers, as invitations, as mnemonic devices, and more. Early systems typically involved conventionalized symbols, though they were not usually associated with specific sounds. These symbolic systems have sometimes served as a foundation for the development of writing. Battiste 1984, for example, traces the evolution of modern Micmac writing from early ideograms through conventionalized hieroglyphics.

An early example of widespread native literacy is that of several Eastern Algonquian groups living in Christian settlements in southeastern Massachusetts: the Massachusett, the Wampanoag (Pokanoket), and the Nauset. Converts to Christianity, they used an orthography developed by the English missionary John Eliot, who translated the Bible in 1663. Literacy was self-taught or passed on informally. The result can be seen in over 150 documents from the 1660s to the 1750s collected and analyzed by Goddard & Bragdon (1988), including deeds, records of town meetings, decisions of special councils, depositions, wills, petitions, letters, notes, arrest warrants, a power-of-attorney, a notice of banns, and a preacher's marriage record.

A strong tradition of native literacy also developed in the West among the Aleut (Ransom 1945a, Krauss 1973, Bergsland 1996). Ivan Veniaminov, a Russian Orthodox priest who arrived at Unalaska in the Aleutian Islands in 1824, devised a Cyrillic-based orthography for the language. Working with Aleut speakers Ivan Pan'kov (chief of Tigalda) and Iakov Netsvetov (priest of Atka), he published religious books in Aleut, including the Gospel according to St. Matthew. Aleut men and boys were taught to read, particularly for religious purposes, but literacy was also passed down within families, and writing came to be used for secular purposes as well, including not only letter writing but also the development of a native literature.

Probably the best known native writing system is the Cherokee syllabary, invented by Sequoyah (also known as George Guess or Gist), a North Carolina Cherokee speaker who neither spoke nor wrote English. The system is described in White 1962, Walker 1969, 1981, 1993, 1996, Monteith 1984, Feeling 1985, McLoughlin 1986, Brooks 1992, and Scancarelli 1992, 1996. Sequoyah first demonstrated it publicly in 1821, then refined it over the next several years. Mooney notes that within a few months of its creation, thousands of Cherokee speakers had learned it, 'teaching each other in the cabins and along the roadside' (1900 cited in Walker 1981: 146-7). It was used in letters, diaries, notebooks of curing formulas, and other personal papers. In 1828 a printing press was set up and publication began of Bible translations, legal and political treatises, and a newspaper, *The Cherokee Phoenix*. Printing was interrupted in 1838 when most of the Cherokee were forced to leave their homes to march west to Indian Territory, but a new press was soon set up in their new home in Tahlequah (Oklahoma), and educational and religious materials were published, as well as two newspapers, *The Cherokee Messenger*, and *The Cherokee Advocate*. Between 1835 and 1861, 13,980,000 pages were printed in Cherokee (White 1962). Today the syllabary is written less often, but it is still read by many adults, mainly in ceremonial contexts.

Sequoyah, the inventor of the syllabary, was inspired by watching people read English, and a number of the symbols he used were based on Roman, Greek, and Cyrillic letters and Arabic numerals. The system was his own, however, and the values of the symbols are unrelated to those of their sources. All but one of the 85 characters represents a syllable (consonant-vowel or vowel). (There is a separate *s*.) Thus EΘ represents the two-syllable word *kǫ:na* 'I am alive' (Scancarelli 1996: 590). In Cherokee, *h* is distinctive, but it is not always marked in the syllabary: AW represents both *ko:la* 'winter' and *kho:la* 'bone'. Tone, which is distinctive in Oklahoma Cherokee, is also not represented in the syllabary, nor is vowel length. Such details are supplied by speakers who know the language. To represent complex syllables, symbols are included for additional consonants and read without the vocalic element: EVD, literally *kǫ-to-a* is used for *ktho:ʔa* 'it is hanging'.

Another syllabary that still enjoys widespread use was created in 1840 by the Protestant missionary James Evans for Cree and Ojibway, two Central Algonquian languages of Canada. It is described in Murdoch 1981, Fiero 1985, and Nichols 1996. Stimulated by the success of the Cherokee syllabary, Evans devised a system in which all syllables beginning with a given consonant are represented by the same basic symbol. Different orientations of the symbol indicate different vowel components. Thus v represents the syllable *pe*, ʌ the syllable *pi*, > the syllable *po*, and < the syllable *pa*. Vowel length, which is distinctive in Algonquian languages, is indicated by a dot over the symbol. A small superscript symbol ˂ is used for *p* alone when it closes a syllable. After Evans printed a hymnal in the syllabary in 1841, the system spread rapidly through both formal and informal teaching. It is still in use today, with adjustments in different versions to reflect details of different dialects.

Soon after its invention the Cree syllabary was introduced by missionaries E.A. Watkins and John Horden to Inuktitut speakers in the Eastern Arctic of Canada, where it quickly gained acceptance (Nichols 1996, Harper 1983a,b, 1985, 1992). A 1976 spelling reform added symbols to represent Inuktitut sounds lacking in the Algonquian languages: uvular stop *q*, fricative lateral *ɬ*, and velar nasal *ŋ*.

The Cree syllabary was also adapted for several Northern Athabaskan languages. An Anglican missionary, William West Kirkby, devised a version for Chipewyan in 1881, which was read by both Chipewyan and Slave speakers. A Catholic missionary, Adrien Gabriel Morice, created a version for Carrier in British Columbia (1890) and published religious materials and a newspaper in his system. The Athabaskan languages have more consonants and more complex syllables than either the Algonquian languages or Inuktitut, so a syllabary with simple CV and V symbols fits their structures less well. Partly for this reason syllabic writing of Athabaskan languages was never as widespread as that for Algonquian languages and Inuktitut.

Several other writing systems were developed during the nineteenth century for languages of the Plains. A set of roman-based alphabets was devised by Jotham Meeker, a teacher and missionary who set up the Shawanoe Mission Press in 1833 Indian Territory (later Kansas) and over a period of 20 years published materials in Unami Delaware, Ottawa, Potawatomi, Shawnee, and Miami (Algonquian languages), Iowa, Kansa, Osage, and Oto (Siouan), and Creek and Choctaw (Muskogean) (Walker 1996). The system was learned by missionaries and some speakers, but it was never widely used. Another writing system was the Great Lakes syllabary utilized for the Algonquian languages Fox, Sauk, Kickapoo, Potawatomai, and Ottawa from at least 1880 (Jones 1906, Michelson 1927). Symbols were learned as syllabic units, though they were based on consonant-vowel combinations of roman letters. In 1884 some Winnebagos from Nebraska visited the Fox in Iowa, learned the system, and adapted it to their own (Siouan) language (Fletcher 1890a,b). The system spread rapidly and for a time was used extensively.

Another dramatic invention was a Yup'ik Eskimo syllabary created by Uyakoq ('Neck') a monolingual Yup'ik speaker in Bethel, Alaska (Schmitt 1951, Henkelman & Vitt 1981, Walker 1981, 1996). Uyakoq began by writing ideographically, using pictures to represent ideas and sometimes words. Around 1900 he observed his son Hermann reading English, and learned to write a few English words, though he did not learn individual letters or the sounds represented by them. Stimulated by this experience, he developed his Yup'ik syllabary. Some of the symbols were adopted from English but given new values, and others evolved from his earlier ideographic system. His system was learned by others and used into the 1970s.

For some groups, syllabaries have been preferred because they can be read quickly (with roughly half the symbols necessary per word as in an alphabet) and because their distinctiveness has been valued as a symbol of ethnic identity. For others, alphabets based on roman letters have been chosen because they capitalize on literacy skills necessary for English, and because they are easily produced on typewriters, computers, and printing presses. Overall, the most successful systems have been those that fit the language well and were passed on informally from speaker to speaker.

2

Words

A fascinating area in which languages differ is the ways in which they package ideas into labeled concepts, or words. Yup'ik, an Eskimoan language of Alaska, contains many words that are roughly equivalent to words in English, but it also contains many that are not. Among its nouns, for example, are *araq*, translated by Jacobson (1984) as 'ash made from birch tree fungus or other special plant products and then mixed with chewing tobacco', *caginraq* 'skin or pelt of caribou taken just after the long winter hair has been shed in spring', and *partak* 'spruce root stretched above water, from which hang a line of snares just above the water's surface, to catch waterfowl'. Verbs include *qamigartuq* 'he goes seal-hunting with a small sled and kayak during the spring', *pug'uq* 'it (a fish or seal) came to the surface, emerging halfway', and *mangirruq* 'it (a dog) is chewing on frozen food, or on the ice where food has frozen on the surface of the snow'. These terms obviously reflect the natural environment in which the language is spoken. Other words reflect other kinds of cultural differences, such as *qatnguq* 'half sibling through a formerly traditional spouse-borrowing relationship' or *tunrirtuq* 'he feels embarrassed because he is imposing on someone; beholden because of an inability to reciprocate for things someone has done for him; embarrassed by the actions of someone such as a child for whom he feels responsible'. These English translations are not of course perfect equivalents of the Yup'ik words: each Yup'ik word corresponds to a single concept for speakers, rather than the complex arrays of ideas conveyed by the long English phrases.

The Yup'ik words above seem narrower in meaning than English words, but others seem broader, permitting us glimpses of alternative semantic connections. The noun *qelta* is used for 'fish scale' but also for 'tree bark', 'eggshell', and 'peel'; *ella* is translated variously as 'outdoors, weather, world, universe, sense, awareness'. The verb *yuuguq* is 'he got out of a boat or sled, took off clothing, removed a net or snare, or took objects out of a container'. Some words seem more specific and more general at the same time, such as *muruuq* 'he sank in (to mud, snow, etc.), put on boots without liners'. In the end, one language is not more specific or abstract than the other; they simply partition experience in different ways.

2.1 Polysynthesis

A striking feature of certain North American languages is the length of their words. Verbs like that in (1), for example, are not unusual in Yup'ik. Words of this length usually consist of multiple meaningful parts or **morphemes**. The second line of the example shows these parts, and the third line gives the meaning (**gloss**) of each morpheme. The fourth line is a free translation of the word as a whole.

(1) POLYSYNTHESIS IN YUP'IK — George Charles, speaker
kaipiallrulliniuk
kaig-piar-llru-llini-u-k
be.hungry-really-PAST-apparently-INDICATIVE-they.two
'the two of them were apparently really hungry'

Languages which show high numbers of morphemes per word are described as **polysynthetic**, a term coined by Peter Stephen Duponceau in 1819. Not all North American languages are polysynthetic; some are only mildly synthetic, but there are no truly analytic languages, in which all words would consist of a single morpheme.

It might be wondered how we can know that (1) is a single word, since it apparently conveys the same meaning as an entire English sentence. Indeed, this word could be used alone as a full sentence in Yup'ik. Words may be identified in several ways, some useful cross-linguistically, others more language-specific. The best criterion is usually the judgment of native speakers. Whether or not they have given much thought to grammar, speakers of most languages can repeat a sentence word-by-word with confidence, pausing between words. In natural speech, speakers seldom pause in the middle of words; if they are derouted in mid-word, they generally start anew, returning to the beginning of the word. Speakers are usually aware of the meanings of whole words, but they are often not conscious of the meanings of individual morphemes nor of the boundaries between the morphemes.

Words can often be identified in particular languages by other specific characteristics as well. Words have no more than one primary stress, and in some languages it regularly occurs on a specific syllable. In Chitimacha, a language of the Gulf, the main stress always occurs on the first syllable of a word, while in Tuscarora, a Northern Iroquoian language, it occurs on the next-to-last (penultimate) syllable. Words are easily identified in some languages by their morphological structure. Yup'ik verbs always begin with a root morpheme like *kaig-* 'be hungry' in (1) and end with a pronoun like *-k* 'they two'. There are cases in which boundaries between certain words are less clear. This is because adjacent words can fuse gradually over time. We can see this with compounds like English *apple sauce/applesauce* and with particles that evolve into clitics and affixes, like the English negative *do not* > *don't*.

Does it matter whether information is expressed in a single word or a series of words? Polysynthetic languages like Yup'ik show that it can. Languages with constructions like that in (1) usually have analytic alternatives: speakers can choose to express similar ideas in a series of words. In addition to the suffixes *-piar* 'really', *-llru* PAST, and *-k* 'they two', Yup'ik contains words and phrases like *cakneq* 'very (much)', *ak'a tamaani* 'a long time ago', and *ellmek* 'they two'. The independent words are used for emphasis, to focus attention on information of special importance. The sentence *cakneq kaillrulliniuk* (very they.were.apparently.hungry) focuses on the intensity of the hunger. The phrase *ak'a tamaani* 'a long time ago' often appears at the beginning of narratives to set the scene in time. Independent pronouns like *ellmek* 'they two' are typically used for contrast. Separate words can be given special auditory prominence with intonation, high pitch, volume, and length, an option not available for suffixes. The feature of polysynthesis in a language can provide speakers with powerful stylistic alternatives.

2.2 Parts of words: roots, affixes, and clitics

Morphemes can be classified in several ways. One important distinction is that between roots and affixes. **Roots**, like *kaig-* 'be hungry' in (1) above, serve as the obligatory foundation of the word and typically carry its main meaning. **Affixes** never occur in isolation, never serve as the bases of words and usually carry subordinate meanings. They may occur before the root (**prefixes**), after the root (**suffixes**), or inside of the root (**infixes**). Infixes are rare, but an example can be seen in Salinan, a language of central California. The plural of some Salinan stative verbs is marked with an infix *-x-* before the second consonant of the root: *k-ló·l* 'it burned', *k-lo-x-l* 'they burned'. (Turner 1987: 152). (The prefix *k-* represents third person.)

A third kind of morpheme, **clitics**, can be distinguished from both roots and affixes. Like affixes, clitics never stand alone as words, but they differ from affixes in that they are attached not to a specific kind of word such as a noun, but to a phrase, clause, or sentence. The difference can be seen by comparing the English plural suffix *-s* and the possessive clitic *=s*. The plural suffix is attached to noun stems: *cat-s, friendship-s*. The possessive clitic is attached to the last word of a noun phrase, whether it is a noun, adverb, verb, etc.: *[the cat]=s paw, [yesterday]=s news, [the man you met]=s mother*. Clitics that appear at the beginning of words, before any prefixes, are termed **proclitics**; those at the end are **enclitics**. The possessive *=s* is an enclitic.

Mirroring their formal structure, clitics usually modify larger stretches of material than that expressed in a single word. A typical example is the Yup'ik hearsay enclitic *=gguq*, which indicates that the information communicated was told to the speaker by someone else rather than witnessed directly. It generally follows the first word of a sentence. (Each line in (2) represents a separate intonation unit or prosodic phrase.)

(2) YUP'IK HEARSAY ENCLITIC — Elizabeth Ali, speaker

Tauna-gguq,
tauna=gguq
that=HEARSAY

angukara'urluq,
angute-karaq-rurluq
man-little-dear

kipusvigtellinilria . . .
kipute-vig-te-llini-lria
buy-LOCATIVE.NOMINALIZER-go.to-apparently-PARTICIPIAL.INTRANSITIVE.3SG

'That dear little man, they say, apparently went to the store . . .'

Another way in which morphemes are sometimes classified is as free or bound. Free morphemes may stand alone as words, while bound ones may not. In many languages roots are free, like English *burn*. In a number of North American languages roots are bound, like the Yup'ik verb roots *kaig-* 'be.hungry' and *kipute-* 'buy'. Speakers may not even recognize bound roots in isolation. Affixes and clitics are of course always bound.

Affixes and clitics are sometimes classified on still another basis, as derivational or inflectional. The distinction is not always a clean one, as has been made clear by Bybee (1985) and others, but it is sometimes useful for describing cross-linguistic differences and changes over time. Derivational affixes create new vocabulary: adding the suffix *-ship* to the English noun *friend* creates a new noun *friendship*, a word we might expect to find as a separate entry in a dictionary. Both roots and derived forms (*friend*, *friendship*) are referred to as **stems**. Inflectional affixes, by contrast, do not create new vocabulary, but rather modify stems in some way. A typical inflectional suffix is the English plural *-s* which is added to noun stems. Inflectional affixes usually mark obligatory distinctions, like number in English.

Morphemes may show different shapes in different contexts, termed **allomorphs**. The change in shape is often triggered by neighboring sounds. The English negative prefix *in-* 'not' of *in-edible* sometimes appears as *im-*, *il-*, or *ir-* in anticipation of the sound that follows: *im-mobile*, *il-legible*; *ir-replaceable*. Such shifts are usually systematic, describable by rule. Sometimes an alternate shape is not predictable from adjacent sounds but is simply required in the context of particular morphemes. With certain English adjectives, for example, no member of the alternants *in-/im-/il-/ir-* is used; *un-* appears instead: *un-moved*, *un-lucky*, *un-repentant*.

Alternations in the forms of morphemes may be more complex. Certain languages, particularly in the West, exhibit **ablaut**, whereby stems show systematic phonological changes or mutations in different morphological contexts. The changes may be qualitative, involving shifts in point of articulation or manner, or they may be quantitative, involving vowel or consonant shortening, lengthening, loss or addition. Examples of ablaut can be seen in Hill Patwin, a Wintuan language of central California (Whistler 1981). Some Hill Patwin verb stems consist of a single CVC syllable, like *ham* 'sit'. For imperatives, the basic stem is used alone. For progressive verbs, a copy of the stem vowel is added before the progressive suffix *-s*. For future tense verbs, a copy is added then lengthened before the future suffix *-ɬas*.

(3) STEM ABLAUT IN HILL PATWIN — Whistler 1981

ham	'Sit down!'	*ɬew*	'Talk!'	*ɬup*	'Drink the soup!'
hama-s	'he is sitting'	*ɬewe-s*	'he is talking'	*ɬupu-s*	'he's drinking soup'
hama·-ɬas	'he will sit'	*ɬewe·-ɬas*	'he will talk'	*ɬupu·-ɬas*	'he will drink soup'

The Utian languages of central California show extensive ablaut (Callaghan 1980, 1997). In Central Sierra Miwok, verb stems appear in different shapes before the present, future, habitual, and certain other suffixes. Thus the stem 'jump' has forms *tuyá·ŋ-/tuyáŋ·-/t úy·aŋ-/t úyŋa-* depending on the tense/aspect of the verb (Freeland 1951: 94). Takelma, an isolate of Oregon, shows both vocalic and consonantal ablaut. Verbs are inflected with suffixes as past/present, future, potential, inferential, present imperative, or future imperative. Every verb stem has two forms, one for use in past or present verbs (realis), the other for all other verbs (irrealis). The alternants show systematic patterns: *ƙolol-/go·l-* 'dig', *ɬebe-/de·b-* 'arise', *ɬayag-/da·g-* 'find', *lop̓od-/lopd-* 'rain/snow/hail', *laƈag-/lasg-* 'touch' (Sapir 1922: 62-3, with standardization of symbols). There is also extensive ablaut in the Yokutsan languages (Newman 1944: 33-8) and it appears as well in Muskogee, Alsea, and Maiduan languages (Haas 1940, Silverstein 1979, Buckley 1994, Callaghan 1997, DeLancey & Golla 1997).

It is sometimes simpler to think of affixes not as specific sequences of consonants and vowels but rather as operations that alter the shape of the word in some way. Describing the past tense in English, for example, we might say that past tense verbs are formed by a process of suffixation (*look*, *look-ed*) or a change in vowel (*ride*, *rode*). In Central Sierra Miwok, nouns may be derived from verbs, and verbs derived from nouns, by changes in quantity (length), stress, and the order of sounds (metathesis): *ʔú·ču-* 'house', *ʔúč·u-* 'to live'; *kálŋa-* 'a dance', *kalá·ŋ-* 'to dance' (Freeland 1951: 12). Identifying specific affixes that could be glossed as nominalizers or verbalizers here would present a challenge, but describing the relations between the noun and verb pairs in terms of processes or operations is feasible.

A common kind of operation is reduplication, whereby a root, stem, or word is repeated in its entirety or, more often, in part. It is perhaps the most iconic of all morphological operations, often indicating some kind of multiplicity. In Barbareño Chumash, as in many languages, it can add a plural meaning to nouns or an iterative meaning to verbs: *čalayaš* 'trail', *čal-čalayaš* 'trails'; *exlelen* 'to cry out', *s-ex-ʔexlelen* 'it cries out continuously' (Wash 1995). Reduplication often includes a distributive feature, spreading entities or events over various locations or times. Reduplication is pervasive in North America, particularly in languages of the West, occurring in Algonquian, Siouan, Uto-Aztecan, Yuman, Yokuts, Utian, Pomoan, Maidun, Wintun, Coosan, Sahaptian, Wakashan, and Tsimshianic languages as well as in Yuchi, Salinan, Esselen, Washo, Karuk, Shasta, Alsea, Siuslaw, Takelma, and Klamath. It is particularly well developed in languages of the Salishan family.

2.2.1 *Morpheme order*

The relative order in which morphemes occur in words is notoriously more fixed than the order of words in sentences. Morpheme order may follow two kinds of principles. In some languages, morphemes are rigidly ordered according to a set pattern or template. In the Iroquoian languages of the East, for example, both nouns and verbs show such templates. The verb template can be seen in Figure 1.

PREPRONOM. PREFIXES	PRONOMINAL PREFIXES	REFLEXIVE PREFIX	NOUN STEM	VERB ROOT	DERIVATIONAL SUFFIXES	ASPECT SUFFIXES	FINAL SUFFIXES

FIGURE 1: NORTHERN IROQUOIAN VERB TEMPLATE

The languages differ slightly in the details of their morphologies, but they generally contain nearly a dozen prepronominal prefixes and a good dozen derivational suffixes. Each of these affixes occurs in a specific position with respect to the others, though not all occur in every word. Multiple prefixes can be seen in the Tuscarora in (4). The translocative indicates motion 'away', the factual marks a past or present event known to have happened, the dualic adds the element 'two', and the repetitive 'back'.

(4) TUSCARORA AFFIX ORDER — Elton Greene, speaker
yaʔnąʔ:tsyę:t
y-aʔ-ʔn-ąts-ye-e-t
TRANSLOCATIVE-FACTUAL-DUALIC-REPETITIVE-INDEFINITE.AGENT-GO-PERFECTIVE
'they two went back there'

Speakers have no choice in morpheme order, which is invariant. If the order of prefixes in (4) were altered, the word would be unrecognizable, probably not even interpreted as Tuscarora. The order cannot be said to reflect semantic or syntactic scope. Among the prepronominal prefixes are both the translocative *y-* 'away' seen above and a cislocative *na-* 'toward'. They are nearly perfect counterparts: 'thither' and 'hither'. Yet they occur in different positions in the template. The translocative occurs near the beginning: only one other prefix may precede it. The cislocative is the last of the prepronominal prefixes. Their positions are a result of history. The cislocative prefix became part of the verb morphology early in the evolution of the language, while the translocative prefix was grammaticized later (Mithun 1999b).

Morphological ordering is not always templatic. Yup'ik shows layered or hierarchical ordering, as if words were built up step by step, beginning with the root. Each added suffix has semantic and grammatical scope over all material to its left.

(5) YUP'IK LAYERED MORPHOLOGY — George Charles, speaker
ayagyuumiitqapiartua
ayag-yug-umi-ite-qapiar-tu-a
go-want-be.in.state-not-really-INTRANSITIVE.INDICATIVE-1SG
'I really don't want to go'

Alternative orders are used to convey different scope relations. In the noun on the left in (6)a, the suffix *-cuar* 'little' modifies the full derived stem *yug-pag-* 'giant'. In the noun on the right, the suffix *-pag* 'big' modifies the full derived stem *yug-cuar-* 'midget'. Similar differences in scope can be seen by comparing the verbs in (6)b.

(6) ALTERNATIVE SCOPE RELATIONS IN YUP'IK NOUNS — Elizabeth Ali, speaker

a.	*yugpacuaq*	*yucuarpak*
	yug-pag-cuar	*yug-cuar-pag*
	person-big-little	person-little-big
	'little giant'	'big midget'
b.	*ayagciqsugnarqnillruuq*	*ayagciqnillruyugnarquq*
	ayag-ciq-yugnarqe-ni-llru-u-q	*ayag-ciq-ni-llru-yugnarqe-u-q*
	go-FUT-probably-claim-PAST-INDIC.INTR-3SG	go-FUT-claim-PAST-probably-INDIC.INTR-3SG
	'he said he would probably go'	'he probably said he would go'

The order of morphemes is still not fully free in Yup'ik. All nouns and verbs begin with a root and end with an inflectional suffix (zero in unpossessed absolutive nouns as in (6)a). Some orders never occur because they would make no sense. Others have occurred so often that they have become routinized, like *-yuumiite-* 'not want' in (5).

2.2.2 *General compounding*

Roots or stems may be combined in many languages to form compounds. In some languages, two noun stems may be combined to form a new noun stem, as in Ahtna, an Alaskan Athabaskan language. Kari (1990: 254) lists a number of NOUN-NOUN compounds containing the noun root *k'ae* 'cavity': *łe-k'ae* 'smoke-cavity' = 'smokehole', *ta-k'ae* 'elongated/closed.object-cavity' = 'timbered river valley', *-k'a-ƚ'ae* 'surface-cavity' = 'wound, sore', *la-kae* 'hand-cavity' = 'palm of the hand', *-ts'u'u-k'ae* 'umbilical.cord-cavity' = 'navel', *neh-k'ae* 'eye-cavity' = 'game lookout'.

In some languages two or more verb stems may be combined to form a new verb stem, as in Tonkawa, a language isolate of Texas. Hoijer (1931: 26) cites a number of such VERB-VERB compounds, including *ga·n-aidjona-* 'throw-move.up' = 'to throw (something) upward', *yagau-nadjga-* 'kick-kill' = 'to kick to death', *hedai'o·-he·cogyaw-* 'join.in-fight' = 'to join in a fight, war'.

In some languages a noun stem may be combined with a verb stem to yield a new verb stem. Examples of such NOUN-VERB compounds can be seen in Kitanemuk, a Uto-Aztecan language of southern California: *ni-kaŋa-win* 'I-beard-pluck' = 'I pluck my beard hairs', *ʔa-mani-muk* 'he-toloache-sick/dead' = 'he is drunk with toloache', *ni-tikwaka?-yaw* 'I-shadow-grab' = 'I am going to shade myself' (Anderton 1988: 156). Compounding of this type, termed **noun incorporation**, plays an important role in a number of North American languages.

2.2.3 *Noun incorporation*

Noun incorporation is a kind of NOUN-VERB or VERB-NOUN compounding that derives verb stems. It is not universal in North America, as was once thought, nor is it present in all polysynthetic languages, but it does play an important role in many, including languages of the Iroquoian, Caddoan, Siouan, Kiowa-Tanoan, Uto-Aztecan, Athabaskan, and Tsimshianic families, as well as in Natchez, Zuni, Chimariko, Yana, and Takelma. Traces of earlier incorporation processes can be seen in languages of the Muskogean and Yuman families.

An example of noun incorporation can be seen in the Tuscarora verb in (7).

(7) TUSCARORA NOUN INCORPORATION — Elton Greene, speaker

wą́:ʔnakwahst
w-ą́ʔn-akwahst
NEUTER-day-be.good.STATIVE
'it is day-good' = 'it's a good day'

The verb stem *-ą́ʔn-akwahst* 'be a good day' is composed of the noun root *-ą́ʔn-* and the verb root *-akwahst* 'be good'. Languages with noun incorporation generally

contain a parallel analytic construction as well, in which the noun and verb can be expressed in separate words. (Both noun and verb roots in the Iroquoian languages are bound, so must be combined with affixes like the neuter prefix *w-* to form words.)

(8) TUSCARORA ANALYTIC COUNTERPART — Elton Greene, speaker

wákwahst	*awą́:ʔne*
w-akwahst	*aw-ą́ʔn-e*
NEUTER-be.good.STATIVE	NEUTER-day-NOUN.SUFFIX

'the day is good'

Such counterparts would not coexist so systematically if they did not have distinct functions. One function is the creation of lexical items. Like all compounding, incorporation serves as a device for creating vocabulary, names for concepts as in (9).

(9) TUSCARORA VOCABULARY CREATION — Elton Greene, speaker

a. *waʔuwisą́:ʔniʔ*
waʔ-u-wis-ą́ʔni-ʔ
FACTUAL-NEUTER-ice-throw-PERFECTIVE
'it ice-threw' = 'it hailed'

b. *wekhwą́:tiʔ*
w-e-khw-ą́ti-ʔ
FACTUAL-FEM.AGT-food-make-PERFECTIVE
'she meal-made' = 'she cooked'

Incorporation can affect the syntactic structure of clauses by altering the argument structure of the verb. In Iroquoian languages, core arguments, that is the primary participants involved in situations, are represented by pronominal prefixes on the verb. Incorporated nouns do not function as core arguments; they simply modify the verb, narrowing its meaning. The sentence in (9)b 'she cooked' is intransitive; its only core argument is 'she'. The noun root 'meal' narrows the meaning of 'make', to indicate a particular kind of making. Among the most frequently incorporated nouns cross-linguistically are terms for body parts, including the mind. Incorporation of these terms allows speakers to locate the immediate effect of a situation but still cast a person as core argument, the one most significantly affected. Instead of saying 'his head aches', one can use the construction in (10)a, 'he head-aches', or 'he aches headwise'. Instead of 'she tested my mind', one says 'she mind-tested me' or 'she tested me mentally'. The most important participants are the people, not their parts.

(10) TUSCARORA ARGUMENT STRUCTURE — Elton Greene, speaker

a. *ruta?ranąhwaks*
ru-ta?r-nąhwak-s
he-head-ache-IMPERFECTIVE
'he has a headache'

b. *wa?ąk?tikąhra?tyą́:?nąʔ*
wa?-ąk-?tikąr-?tyąʔnąʔ
FACTUAL-she/me-mind-test-PERFECTIVE
'she tempted me'

In some languages noun incorporation also serves as a rhetorical device for controlling the flow of information through discourse. Entities that are worthy of individual attention, perhaps because they are being introduced into the discourse for the first time or they constitute a focus of contrast, are often first mentioned with independent nouns. Entities that are incidental or already an established part of the scene may be mentioned by incorporated nouns. This usage can be seen in (11). When the Fox instructed his well-wishers to keep an eye on his tail, he first focused on the tail with an independent noun (first line). Subsequent mention of the tail, now an established part of the scene, was with an incorporated noun (last line).

(11) TUSCARORA INCORPORATION IN DISCOURSE — Elton Greene, speaker

θatkáhthu	*kyení:kǫ*	*ki?rhwáǫθeh*
θ-atkahthu	*kyenikǫ*	*k-i?rhwǫθ-e*
2SG.AGENT-look	this	1SG-tail-NOUN.SUFFIX

'Watch my tail;

[You will see that it is upright. That means that I'm winning. That is,]

stá:kwi?	*kyení:kǫ*	*nǫyu?rhwǫθawǫ?ǫ:k*
stakwi?	*kyenikǫ*	*n-ǫ-yu-?rhwǫθ-wǫ?-ǫ-k*
high	this	PARTITIVE-FUTURE-NEUTER.PATIENT-tail-be.there-STATIVE-CONT

it (the tail) will be aloft.'

In some languages, verbs containing incorporated nouns may cooccur with independent nominals. In Tuscarora these nominals may consist of a noun, descriptive verb, demonstrative, number, or some combination of such elements.

(12) TUSCARORA COMPLEX VERBS WITH INDEPENDENT NOMINALS — Elton Greene, speaker

a.

yeta?narǫ́:ti	*kanǫhúhtsyǫ:*	*utá?nareh,*
ye-ta?nar-ǫti-h	*ka-nǫh-uhtsy-ǫ:*	*u-ta?nar-e*
INDEF.AGT-bread-make-IMPRF	NEUTER-corn-peel-ST	NEUTER-bread-NOUN.SUFFIX

'. . . one (bread) makes cornbread' = '(how to) bake cornbread'

b.

Wǫ?nwirǫ́ha?w	*hení:kǫ*	*ǫ́:tsih*
w-ǫ?n-wir-ǫhaw-?	*heni:kǫ*	*ǫtsi*
FACTUAL-she/her-child-take-PR	that	one

'She (child)-took along one.'

The existence of constructions like those in (12) has motivated some analysts to describe incorporation as a syntactic movement process whereby the head of a noun phrase is copied or moved out of its basic position in the noun phrase and into the verb, 'stranding' any demonstratives, numbers, and adjectives that are left behind. But such words occur as nominals whether or not there is an incorporated noun.

(13) TUSCARORA SIMPLEX VERBS WITH INDEPENDENT NOUN PHRASE — Elton Greene, speaker

a.

thwahra?nyerǫ́:tsi?	*kyení:kǫ:*
th-wa-hr-a?n-yer-ǫtsi-?	*kyení:kǫ:*
CONTRASTIVE-FACTUAL-MASC.AGENT-MIDDLE-do-INTENSIFIER-PERFECTIVE	this

'He was surprised, this one.'

b.

sè:nǫ?	*ya:kayè:ryu?*	*tiwǫθrí:yu:*
sè:nǫ?	*y-aa-ka-ye-ryu-?*	*ti-w-ǫθr-iyu:*
never	TRANSLOC-OPTATIVE-PL-INDEFINITE.AGENT-kill-PRF	PARTITIVE-NEUTER-size-big

'Never could they kill one so large.'

There is little evidence within the language for assuming that nouns like 'bread' in (12)a originate in a separate noun phrase. The complex verb stem *-ta?nar-ǫti-* 'bread-make' is simply a derived verb for 'bake', a lexical verb that can appear with any nominals indicating baked goods, such as 'pie' or 'cake', or with no nominal at all.

The process of incorporation can have a structuring effect on the lexicon. Among the most common incorporated nouns in Northern Iroquoian languages are terms for (a) 'body', (b) 'mind', and (c) 'matter/idea/word'. They provide an overt classification of verbs with physical, mental, and abstract effects (Mithun 1986a). Tuscarora shows such compounds as (a) *-kyerh-ahtir* 'body-be.durable' = 'be able bodied', *-kyerh-awyest* 'body-be.seemly' = 'be graceful', *-kyer-i?θer* 'body-drag' = 'drag bodily'; (b) *-?tikǫh-kaθne* 'mind-be.strong' = 'be patient', *-?tikǫh-kǫni* 'mind-win' = 'outwit', *-?tikǫhr-ahnǫ* 'mind-disappear' = 'faint'; (c) *-rihw-akǫ?t* 'matter-strike' = 'condemn', *-rihw-aku* 'matter-pick.up' = 'accept, approve', *-rihw-aruhtsrǫ* 'matter-gather' = 'sum up'.

General discussions of noun incorporation are in Kroeber 1910a, 1911, Sapir 1911b, Mardirussian 1975, Mithun 1984a, 1986b, Mithun & Corbett 1999, Baker 1988a, 1996, Rosen 1989, and de Reuse 1993. A bibliography is in de Reuse 1992. Descriptions of specific languages include Haas 1941a on Muskogean and 1982 on Natchez, H. Woodbury 1975a,b on Onondaga, Booker 1981 on Muskogean, Allen et al. 1984 on Southern Tiwa, Sadock 1985a on Southern Tiwa, Miner 1986 on Zuni, Bonvillain 1989a,b on Mohawk, Axelrod 1990 on Koyukon, and de Reuse 1994 on Lakhota.

Certain derivational constructions have sometimes been referred to as incorporation as well (Sadock 1980, 1985b, 1986, 1991, Baker 1988a, 1996), though they are structurally distinct (Sapir 1911b). These are described in the next section.

2.2.4 *The functions of roots and affixes*

It is generally assumed that roots carry the central meanings of words, and that affixes simply modify them, often in relatively abstract ways. We expect roots to have meanings like 'mouth' or 'hunt' and affixes to mark distinctions like past tense or causation. To a great extent our expectations are borne out in North America, but some of the languages call them into question. These languages contain affixes with meanings that are usually expressed in separate words in the more familiar languages of Europe. Some express manner, like the Barbareño Chumash prefix *-ap-* 'rapidly': *s-aqliwin* 'she swallows', *s-ap-aqliwin* 'she gulps down'. Some indicate location, like the Kwakwala (Wakashan) suffix *-iɬ* 'in the house/on the floor': *teptebí-iɬ* 'to be shattered on the floor' (Boas 1947: 250). Some indicate instruments, like the Tümpisa Shoshone (Uto-Aztecan) prefix *tsiH-* 'with a sharp/pointed instrument': *kaʔah* 'break', *tsik-kaʔah* 'to cut' (Dayley 1989: 97). Such affixes are described in chapter 3.

Affixes with even more root-like meanings occur in languages of the Salishan, Wakashan, Chimakuan, Tsimshian, and Eskimo-Aleut families. Suffixes with noun-like meanings are pervasive in Salishan. Termed **lexical suffixes**, they are discussed in grammars and in Davis & Saunders 1972, 1973, Kinkade 1973a, 1998, Saunders & Davis 1975a,b,c, 1977, Hagège 1978, Egesdal 1981, Czaykowska 1982, Carlson 1990, Czaykowska-Higgins, Willett, & Bart 1996, and Gerdts & Hinkson 1996.

A sample of the 100 or so lexical suffixes in Spokane, a Salishan language of eastern Washington, includes *-alqs* 'clothes, shirt', *-álqʷ* 'tree, long cylindrical object', *-ałq* 'fruit, berry, game, race', *-ałqʷlt* 'throat', *-aqs* 'nose, road', *-á(sq̓t)* 'day', *-axn* 'arm', *-axʷcč* 'chest, breast', *-cin* 'mouth, lips, speech, tongue, food', *-ečst* 'hand, work, finger, edge', *-élixʷ* 'people, residents', *-elp* 'floor, covering', *-élps* 'nape', *-els* 'front, feeling', *-elt* 'stomach, inside of body, child', *-elc̓eʔ* 'inside of body, animal', *-élp* 'plant', *-etxʷ* 'skin, hide, house', *-enʔe* 'surface all over', *-eneʔ* 'ear, surface', *-énč* 'stomach, wall', *-ep* 'foot, bottom, base, below', *-éplеʔ* 'knob, handle', *-esšn̓* 'rock, berry, fruit, forehead, round object, knobbed object', *-etkʷ* 'water', *-ew̓t* 'boat, vehicle, something in the water', *-ew̓t* 'scattered', *-éw̓s* 'middle, half, center', *-éys* 'tooth, rain', *-eʔ* 'thing', *-íc̓eʔ* 'skin, hide, blanket, shell, outside covering of something', *-ičn* 'back, behind', *-íńč* 'bow, weapon', *-łq̓eyt* 'shoulder', *-łq̓ut* 'body covering', *-łtumš* 'person', *-qin* 'head, top', *-sqáxeʔ* 'animal, cow, horse, dog', *-šin* 'foot, leg', *-tč* 'winter', *-úleʔxʷ* 'ground', *-úps* 'tail, rump', *-us* 'eye, face, neck, belly, window, fire', *-ustn* 'thigh' (Carlson & Flett 1989, Carlson 1990). Inventories of lexical suffixes may be large; as many as 200 have been identified in some Salishan languages (Dale Kinkade p.c. 1996). They vary in productivity, but many are highly productive and pervasive in speech.

The suffixes may be attached to stems with both noun-like and verb-like meanings, as seen in (14).

(14) SPOKANE NOUN-LIKE SUFFIX: *-cin* 'mouth, food ...' Carlson & Flett 1989

a. *n-c̓m-cín*
LOCATIVE-river-mouth
'the mouth of a river'

b. *čn téw-cn*
I transact.business-mouth
'I bought groceries'

Affixes with verb-like meanings can be seen in Yup'ik. Yup'ik contains over 450 derivational suffixes, including *-cur-* 'hunt', *-tur-* 'eat', *-ar-* 'say', *-ci-* 'buy', *-ninarqe-* 'smell or taste like', *-ir-* 'be cold', *-liyar-* 'participate in', *-miuyaar-* 'speak the language of the residents of', *-kuar-* 'go by way of', *-te-* 'obtain, catch game', *-tar-* 'fetch, gather', *-car(ar)te-* 'hit', *-ir(ar)te-* 'hurt', *-atur-* 'use', *-ite-* 'encounter', *-li-* 'make', *-kiur-* 'prepare', *-lgir-* 'take along', *-nge-* 'acquire', *-kliute-* 'take possession of', *-tar-* 'exist', *-ksagute-* 'acquire', *-kite-* 'supply', *-ngqerr-* 'have', *-lir-* 'have lots of', *-ngite-* 'lack', *-ngir-* 'be deprived of, remove', and more. Some are attached to noun stems as in (15)a, and some to verb stems as in (15)b. They all derive new verb stems.

(15) YUP'IK VERB-LIKE SUFFIXES George Charles, speaker

a. *nayircurtuq*
nayir-cur-tu-q
seal-hunt-INDIC.INTR-3SG
'he is seal-hunting'

b. *qavangcaartua*
qavar-nge-caar-tu-a
sleep-begin-try-INDIC.INTR-1SG
'I am trying to sleep'

The concrete meanings of these Spokane and Yup'ik suffixes might suggest that the usual functions we associate with affixes are not universal. A closer look indicates that the affixes do differ systematically from roots in function, though the difference can be subtle. Most of these suffixes have independent root or stem counterparts. Beside the Spokane suffix *-cin* 'mouth' there is the stem *splím̓cn* 'mouth'; the suffix *-etxʷ* and the root *q̓étt* both mean 'skin, hide'; the suffix *-ečst* and the root *kʷul̓* both mean 'work'; the suffix *-eʔ* and the root *tem̓* both mean 'thing'; the suffix *-sqáxeʔ* and the stem *xʷixʷeyúɬ* are both translated 'animal'. Similarly, Yup'ik contains both a suffix *-tur-* 'eat' and a verb root *nere-* 'eat'; the suffix *-ar-* and the root *qaner-* both mean 'say'; the suffix *-ngqerr-* and the root *pik-* both mean 'have'; the suffix *-caar-* and the root *naspaa-* both mean 'try'; the suffix *-nge-* and the root *ayagnir-* both mean 'begin'. The roots and suffixes would not coexist so systematically if they were equivalent.

There are clear formal differences between the roots and suffixes. Spokane noun roots can stand alone as words, but the noun-like lexical suffixes cannot. They must always follow a root. Similarly Yup'ik verb roots can constitute words on their own with just an inflectional ending, but the verb-like suffixes cannot. Yup'ik roots always appear at the beginning of a word, but the suffixes never do; they must follow a root.

The roots and suffixes differ in meaning as well. The suffixes are typically more

general and diffuse semantically than roots. The Spokane stem *splím̓cn* is used for 'mouth' or 'lips', but the suffix *-cin* is used for 'mouth, lips, edge, speech, tongue, food, eat' and more. The root *q̓étt* is used for 'skin, hide', while the suffix *-ɬtʷ* is used not only for 'skin, hide' but also for 'house'. A house serves as a kind of metaphorical skin. The suffixes are not simply more general in meaning, though they often are that. They often carry a diverse set of meanings that are linked through semantic extension and abstraction. The suffix *-álqʷ* means not only 'tree' but also 'long cylindrical object'. The suffix *-esšn̓* is not only 'rock' but also 'round object, berry, forehead'.

The same difference can be seen in Yup'ik. Though the meanings of the verb-like suffixes may seem quite specific in particular contexts, they are typically more diffuse and/or general in meaning than their root counterparts, as can be seen by comparing the various translations of the suffixes *-liur-* and *-tur-* in (16).

(16) GENERALITY OF MEANING OF YUP'IK SUFFIXES — Jacobson 1984

kegguteliurtuq	'he's brushing his teeth'	(*keggun*	'tooth')
qusngilliurtuq	'he's cooking reindeer meat'	(*qusngiq*	'reindeer')
eqiurtuq	'he's chopping wood'	(*equk*	'wood')
kipusviliurtuq	'he's working at the store'	(*kipusvik*	'store')
neqeliurtuq	'he's cutting fish'	(*neqa*	'fish')
akutarturtuq	'he's eating Eskimo ice cream'	(*akutaq*	'Esk ice cream')
atkugturtuq	'he's wearing a parka'	(*atkuk*	'parka')
augturtuq	'he's taking Communion'	(*auk*	'blood')
puyurturtuq	'he's smoking'	(*puyuq*	'smoke')
umyuarturtuq	'he's thinking'	(*umyuaq*	'mind')

The suffix *-liur-*, translated 'brushing, cooking, chopping, working, cutting', actually contributes a general meaning 'be occupied with'. The suffix *-tur-* 'eating, wearing, taking, smoking, thinking', is as general as the English 'have' in 'have some ice cream', 'have a jacket', 'have Communion', 'have a smoke', and 'have a thought'.

The suffixes differ from roots in the kinds of uses to which they are put. An important function is lexical: they serve as devices for building new vocabulary. For this reason, they often appear in highly idiomatic constructions.

(17) IDIOMATICITY OF SPOKANE LEXICAL SUFFIX CONSTRUCTIONS — Carlson & Flett 1989

nx̓nélč	*sqʷáqʷci?*
n-x̓am̓-e	*s-RDP-qʷec-ic̓e?lč*
in-dry-belly	NOMINALIZER-DIMINUTIVE-warm-skin
'burned tree dried up inside' or 'fireplace'	'rabbit'

The idiomaticity points to the fact that these are derivational suffixes, used to create words for a purpose. Furthermore, once the derived words have been lexicalized, they may shift freely in meaning as lexical units, without regard to their internal structures.

The Yup'ik verb-like suffixes are also used to create lexical items, labels for recurring concepts, nameworthy in their own right. It is not surprising that the language should contain a suffix meaning 'hunt': different kinds of hunting are distinct concepts in such a culture, worthy of separate names. There is thus not only *nayircurtuq* 'he is seal-hunting', but also *kanaqlaggsurtuq* 'he is muskrat-hunting', *tuntussurtuq* 'he is caribou-hunting', *yaqulegcurtuq* 'he is bird-hunting', *neqsurtuq* 'he is fishing (fish-hunting)', *kayangussurtuq* 'he is looking for eggs', *kuvyassurtuq* 'he is checking the fishnet', *kapkanarcurtuq* 'he is checking traps', and others. Such suffixes represent recurring elements of nameworthy concepts.

A contrast in use between suffixes and roots can be seen by comparing the suffix *-ar-* 'say/tell' and the root *qaner-* 'say/tell'. The suffix *-ar-* is part of a derived verb stem that represents a single idea, 'greet'.

(18) YUP'IK SUFFIX *-ar-* 'say' — Elizabeth Ali, speaker

camaiarpekenaku
camai-ar-peke-na-ku
hello-say-not-SUBORDINATIVE-R/3SG
'he didn't greet him'

It is easy to see why the suffix was not used in (19). There would be little pressure to derive a special lexical item for 'say the names of her deceased relatives'.

(19) YUP'IK ROOT *qaner-* 'say' — Elena Charles, speaker

qanrutelallrullikii
qaner-ute-lar-llru-lli-ke-ii
say-to-habitually-PAST-apparently-SUBORDINATIVE-3SG/3SG
'she used to tell her

ilallrin	*atritnek*
ila-ller-i-n	*ater-it-nek*
relative-PAST-3SG/3PL-ERGATIVE	name-3PL/3PL-ABLATIVE.PL

the names of her deceased relatives'

In addition to their lexical function of building new vocabulary, the suffixes are also used for special discourse functions. They often serve to background established or incidental information. The first time an entity is introduced, for example, it may be

expressed with an independent word to focus attention on that object. The idea of the object may subsequently be carried along more subtly by suffixes whose contribution is blended with other elements of the word. Such alternations can be seen in a text in Carlson 1978. The story opened with the lines 'Coyote and Gopher had four children. They had a lot to eat, the things Gopher dug.' At this point in the narrative, the food was introduced with an independent word:

(20) SPOKANE STEM *sʔiłn* 'food' Carlson 1978: 4

kʷent	*xʷəʔéʔneʔ*	*łu*	*t*	*səʔíłən*
kʷent	*xʷʔi-enʔeʔ*	*łuʔ*	*t*	*s-ʔiłn*
CONJ	many-surface	ADJ	OBLIQUE	NOMINALIZER-eat
then	they had a lot		of	food

'they had a lot to eat'

The tale continued: 'Coyote hunted and hunted and hunted. Finally he killed one animal and Gopher was happy. They butchered it together. Then Coyote glanced at her, "Oh, she's going to eat some of our food".' At this point the food, now an established element of the scene, was invoked only with the suffix *-cin*.

(21) SPOKANE SUFFIX *-cin* 'food' Carlson 1978: 5

Hoy, qəʔenc̓ixʷcíłəls.
qeʔ-hec-n-c̓eyxʷ-cin-łul-es
1PL.OBJECT-PROG-in-remove/consume-mouth-TRANSITIVE-1PL.OBJECT-3SUBJECT

'Oh, she's going to eat some of our food.'

A similar contrast can be seen in different mentions of a lake, first with a stem, then with only a lexical suffix. Sometime after the animal was butchered, Coyote and his son were walking along when they saw a lake. The lake was introduced with an independent stem.

(22) SPOKANE STEM *čł q̓əlíʔ* 'lake' Carlson 1978: 8

tkʷəʔúʔt	*wíčis*	*liʔe*	*čł q̓əlíʔ.*
tkʷʔut	*wič-n-t-es*	*liʔe*	*čł q̓əlíʔ*
walk.PLURAL	see-CONTROL-TRANSITIVE-3SUBJECT	DETERMINER	lake
they walked	they saw	a	lake

'They walked and saw a lake.'

In the next sentence we are told that geese were sitting on the lake. This time the suffix *-etkʷ* 'water' was used for the now established lake.

(23) SPOKANE SUFFIX *-etkʷ* 'lake' Carlson 1978: 8

hayó	*čłʔayuʔtétkʷ*	*łuʔ*	*kʼəsíxʷ.*
	čł-ʔaẏewt-etkʷ	*łuʔ*	*kʼəsíxʷ*
	on-sit.PLURAL-water	DETERMINER	goose
oh	they were lake-sitting on	the	geese

'Oh, geese were sitting on the lake.'

Entities may be worthy of special attention not only when they are new, but also when they contrast with expectation or signal a shift in the topic of discussion.

The Yup'ik verb-like suffixes are used for similar discourse functions, allowing speakers to background incidental or established information. A sizable proportion indicate simply the presence or absence of entities: their existence or coming into existence, their arrival on the scene, their absence, their departure. Such suffixes include *-tar-* 'exist', *-ngqerr-* 'have', *-lir-* 'have lots of', *-llite-* 'acquire', *-nge-* 'acquire', *-ksagute-* 'acquire', *-kliute-* 'have taken possession of', *-li-* 'make', *-kiur-* 'prepare', *-kite-* 'supply', *-lgir-* 'take along', *-ngicag-* 'lack, need', *-ngite-* 'have no', *-ngir-* 'be deprived of, remove'. All are relatively low in semantic content of their own.

The discourse function can be seen by comparing uses of the suffix *-ngqerr-* and the root *pike-* 'have'. As she described a hunting trip, Mrs. Charles noted that their outboard motor would not start, and they were wondering how to cross the river. Here she used the suffix *-ngqerr-* 'have'.

(24) YUP'IK SUFFIX *-ngqerr-* 'have' Elena Charles, speaker

Icugg,	*Frankie*	*angyangqerrluni*
icugg		*angyaq-ngqerr-lu-ni*
remember	Frankie	boat-have-SUBORDINATIVE-3SG

'Remember, Frankie had a boat.'

While describing another trip, she noted that the family came upon a pair of birds. The father asked his son to shoot them. In this passage she used the root *pike-*.

(25) YUP'IK ROOT *pike-* 'have' Elena Charles, speaker

'[He did not want to shoot them. He said that they were a family.
He did not want to cause grief for their relatives.]

wii	*piksugyaaqlukek*	*cakneq*
wii	*pike-yug-yaaqe-lu-kek*	*cakneq*
I	own-want-in.vain-SUBORDINATIVE-R/3DU	very much

I very much wanted to have them.'

The point of (24) was to introduce the additional boat. Ownership was not important. The suffix *-ngqerr-* served as a prop for the introduction. The point of (25), on the other hand, was the ownership. Here Mrs. Charles used the full root *pike-* 'to own'.

Strikingly similar sets of lexical affixes occur in languages of the neighboring Wakashan, Chimakuan, and Tsimshianic families. As in the Salishan and Eskimo-Aleut languages, their meanings are slightly more general, abstract, and diffuse than those of roots. Their noun-like affixes include a high proportion of terms for body parts, like the Nootka (Wakashan) suffix *-qi·* 'head, end, promontory' or *-aʔsuɬ* 'lips, mouth, rim, opening' (Rose 1981: 359-60). Their verb-like affixes represent elements of recurring activities or the presence and absence of entities, like the Nootka *-ʼi·ḥ* 'hunting, collecting, pursuing, trying to get, trying to earn', and *-ʔa·ta* 'lacking' (Sapir and Swadesh 1939: 322), or the Nisgha (Tsimshianic) prefixes *sə-* 'pick, harvest, catch, process, make' and *ksə-* 'remove' (Tarpent 1987: 572). They are used in the same ways as well, to derive new vocabulary or regulate the flow of information.

In all of these languages the formal difference between roots and affixes corresponds to a difference in function. At the same time, these affixes remain in some ways more root-like than most affixes. They constitute closed classes, but the classes may be large, in the hundreds in some of the languages. Their meanings are more general and abstract than those of roots, but they are still surprisingly concrete and specific. An explanation for their root-like features may come from their origins.

The ROOT-AFFIX combinations of the Salishan, Eskimo-Aleut, Wakashan, Chimakuan, and Tsimshianic languages show many properties of compounds. Egesdal 1981 and Carlson 1990 have proposed that the Salishan structures evolved diachronically from earlier compounds. Compounding can still be observed in many modern Salishan languages, though its productivity varies. Carlson 1990 describes several types of compounding in Spokane. Nominal compounds may be formed by combining two stems with noun-like meanings. The first serves as a modifier and the second as a head: *swipsʔiłn* 'whiteman's food' (*suyápi* 'whiteman' + *sʔiłn* 'food'). This structure strongly resembles root-suffix constructions like *smeʔmélc̓eʔ* 'female animal', which consists of the stem *smʔem* 'female' and the suffix *-elc̓eʔ* 'animal'. Spokane compounds with verbal meanings may be formed by combining a verb-like stem with a noun-like stem, such as *x̌ʷlsʔiłn* 'he abandoned food' (stem *x̌ʷel* 'abandon' + stem *sʔiłn* 'food'). This structure resembles root-suffix constructions like *nʔukʷcíntxʷ* 'you brought him food' (stem *ʔukʷ* 'bring' + suffix *-cin* 'food').

The noun-like lexical suffixes share a number of properties with incorporated nouns in VERB-NOUN compounds. They carry no distinctions of number, definiteness, or case. They do not represent grammatical arguments of the clause, but simply indicate the general involvement of a kind of entity, sometimes as a semantic patient (*nəlc̓ałcən* 'I bandaged your eyes for you' (*n-lic̓-us-ɬ-te-si-n* 'I-tie-eye-relative-to-you')); sometimes as an instrument (*c̓łq̓ʷəmq̓ʷúmšis* 'he pulled them under by the feet' (*c̓ł-q̓ʷum-šin-s* underneath-take.PLURAL-foot-3)); sometimes as a location (*nəxʷstétkʷ* 'he waded' (*n-xʷis-etkʷ* in-walk-water)) (Carlson 1972a: 96-7). Many pertain to body parts. They are used for the same kinds of lexical and discourse functions as incorporated nouns. The lexical suffixes are generally completely different in form from modern roots with the same meaning, like *-etxʷ* and *q̓ett* 'skin, hide', or *-ečst* and *k̓ʷul* 'work'. In a few cases, however, similarities hint at an earlier connection. The Spokane suffix *-ene?* 'ear', for example, matches the root *téne?* 'ear' apart from the initial consonant. The loss of an initial consonant can be seen in several other suffix/stem counterparts, such as *-ulixʷ* and *sc̓úlixʷ* 'earth'. Within Spokane alone Carlson has identified over two dozen pairs of suffixes and stems that appear to be cognate. In some cases of resemblance the modern stems are actually derived from another stem + lexical suffix rather than cognate. Carlson analyzes the stem *sqélixʷ* 'person', for example, as consisting of a nominalizer *s-*, root *qél* 'body, form', and lexical suffix *-ixʷ* 'person'.

The modern Eskimo-Aleut languages show no compounding, but their ROOT-SUFFIX constructions also show certain similarities to compounds, including noun incorporation. Noun roots in these constructions are not core arguments of the clause. A number of suffixes occur principally with noun roots for body parts, such as *-liqe-* 'be afflicted in', as in *aqsaliqua* 'I have a stomach ache' (root *aqsaq* 'stomach') or *qamiquliqua* 'I have a headache' (root *qamiquq* 'head'). The body parts are not core arguments of these constructions, which are intransitive. As in Spokane, the suffixes are usually completely different in form from their root counterparts: *-tur-* and *nere-* 'eat', *-ngqerr-* and *pike-* 'have', *-caar-* and *naspaa-* 'try'. In a very few cases, however, resemblances can be seen that are suggestive of an earlier diachronic relationship. The suffix *-tur-*, translated variously as 'eat', 'wear', 'use', 'have', looks like an eroded form of the root *atur-* 'use', also translated 'wear' or 'sing'. The suffix *-carte-* 'hit in the (body part)' resembles the root *qacarte-* 'hit or slap with the hand'. The suffix *-ngirte-* 'injure, be injured in the (body part)' appears to be a reduced form of the root *akngirte-* 'to hurt, get hurt'.

A historical origin in compounding accounts well for the special properties of the lexical affixes. The fact that the inventories of lexical affixes are often so large can be attributed to their sources in roots, an open class. Their semantic concreteness is explained by the fact that they were still roots when they fused with their hosts, rather than evolving first into particles, then clitics, then finally affixes. The lexical affix constructions are now distinct from incorporation, as has been pointed out by authors from Sapir (1911b) to Carlson (1990). They consist of a root + derivational affix rather than two roots. The lexical affixes differ crucially from roots in showing exactly the effects of grammaticalization that we have come to expect of affixes: the generalization and abstraction of meaning, and the erosion of form.

The existence of verbs based on what are termed 'bipartite stems' by Jacobsen (1980) raises the question of whether all words must contain a root. Delancey finds verbs of this type in languages spoken over an area of northern California and Oregon which he dubs the 'bipartite stem belt' (1996). They appear in a number of families, some hypothesized to be Hokan, some Penutian, and some neither: Washo, Atsugewi, Yana, Klamath, Sahaptin, and perhaps Achumawi, Shasta, and Molala. Traces are visible in Nez Perce and some Numic, Pomoan, and Maiduan languages.

All of the languages contain sets of morphemes that indicate means or manner, like the Maidu *wi-* 'with the hands' in *wi-bák* 'break by snapping with the hands' and *wi-dót* 'shove with the hand or arm' (Shipley 1963). They also contain locative-directional suffixes like the Maidu *-doj* 'up' in *háp-doj* 'hoist up on the back' and *-daw* 'down, away' as in *háp-daw* 'hand down'. They may cooccur: *wi-dók-daw* 'pull off, pull loose', *wi-dók-doj* 'grasp with hand and pull up'. Neither the manner markers nor the locative-directional markers can serve as stems alone, but together they can constitute stems that appear to consist entirely of a prefix plus suffix: *wi-dój* 'pull up' ('by.hand-upward'), *wi-wáj* 'divide' ('by.hand-apart'). Apparently both the manner and directional markers originated as roots which could be compounded. At a certain point the roots ceased to be used as independent stems, but they remained in existing compounds, and in some cases took on new lives as productive affixes.

2.3 Lexical categories: nouns and verbs

Grammars are often organized in terms of kinds of words: nouns, verbs, adjectives, adverbs, prepositions, articles, demonstratives, numbers, and others. It is well known that the inventories of word types are not the same across languages. As elsewhere, most familiar word types are lacking in one or another language in North America. Many languages lack articles, for example. Many lack a separate adjective category, using verbs or nouns to indicate qualities. Certain North American languages even call into question the universality of a distinction between nouns and verbs.

In discussions of lexical categories it is important to decide at the outset whether the units to be categorized should be stems or full words. In some languages the distinction between noun and verb stems is robust. Only noun stems form the basis of nouns, and only verb stems form the basis of verbs. Neither can take the place of the other in the noun or verb template. In others the matter is more complex.

In Yup'ik, there are numerous pairs of noun and verb stems with similar forms and related meanings: *ceneg-* 'a bruise'/'to bruise'; *cer-* 'perspiration'/'to perspire', *eka-* 'to burn/conflagration'. (The velar and uvular fricatives *g* and *r* are automatically pronounced *k* and *q* at the end of a word, as in the absolutive singulars *cenek* 'a bruise' and *ceq* 'perspiration'.) Several facts indicate that noun and verb stems are distinct in Yup'ik, however. Many noun stems have no verb stem counterpart, such as *kuik* 'river' and *kumak* 'louse'. Many verb stems have no noun stem counterpart, such as *avu-* 'to supplement, have bread with tea' and *ciame-* 'to crush'. Speakers know which noun and verb stems exist and which do not, though it is relatively easy to create one from the other if a need arises. Furthermore, though a semantic link can usually be discerned between homophonous noun and verb stems the precise semantic relationships between them are not predictable: the verb stem *elngur-* means 'to be tough but pliable, or thick and viscous (of liquids)', but the noun *elnguq* means 'birch'. The noun stem *mecuq* means 'sap, juice, green or waterlogged wood', but the verb stem *mecur-* is 'to get blood poisoning'. Special derivational morphology is often used to convert one to the other. The verb stem *avu-* 'to supplement, have bread with tea' is nominalized to *avu-kaq* 'a supplement, such as bread to be eaten with tea, or motor oil to be mixed with gasoline for a two-stroke engine' and, in some areas, 'sliced bread' (Jacobson 1984: 95). The noun stem *kumak* 'louse' is verbalized to *kumak-ir-* 'to look for lice'. There are sizable sets of derivational suffixes that alter the lexical category of stems. The situation is not in the end very different from that in English. English contains the noun *(a) beach* and the verb *(to) beach*, both the verb *(to) strike* and the noun *(a) strike*, but it also contains nominalizers and verbalizers: *(to) press, press-ure; friend, be-friend.*

It has been proposed that in some languages stems are not distinguished at all for lexical category. Describing the Coos languages of Oregon, Frachtenberg notes:

> All stems seem to be neutral, and their nominal or verbal character depends chiefly upon the suffixes with which they are used. Consequently two different suffixes--one of a verbal and the other of a nominal character--may be added to the same stem, nominalizing or verbalizing it, according to the requirements of the occasion. (Frachtenberg 1922: 318)

Thus the stem *po·ʷkw-* serves as the basis of both the noun *pó·ʷkw-is* 'slave' and the verb *ŋ-po·ʷkw-its* 'I enslaved him'; the stem *hu·ʷm-* serves as the basis of the noun *hú·ʷ-is* 'woman' and the verb *ŋ-hú·ʷm-is-its* 'I marry (her)'; the stem *ƛ̓kw-i* serves as the basis of the noun *ƛ̓kwi·* 'blanket' and the verb *ƛ̓kw-it* 'she covered (them) with blankets' (Frachtenberg 1922: 328-30).

Hoijer makes a similar observation about Tonkawa, a language isolate of Texas.

> To apply the classificatory notion of "parts of speech" to Tonkawa would be to do extreme violence to the spirit of the language. It is much more in accord with this feeling to divide all words into two very general classes: independent themes, i.e., those which can stand alone, and themes which must be completed in meaning by one or more affixes. (1931: 24)

The same stem (theme) may become nominal, verbal, adjectival, or adverbial, depending on the affixes attached to it and its position in the clause. The stem *xa·x-*

'arrive' may be inflected as a verb to yield *xa·x-ano'* 'he is arriving', or directly as a noun to yield *xa·x-ano'-'a·la* 'the one to arrive'. (The suffix *-'a·la* is the nominative singular definite case.) The stem *t'cel* may be inflected as a noun, as in *t'cel-'a·y'ik ha·no'* 'he goes to the top'. (*-'a·'ik* is the dative case 'to'.) Before a verb, it may serve uninflected as an adverb: *t'cel ha·no'* 'he goes upwards' (Hoijer 1931: 25).

Sometimes the lexical items to be categorized are whole words rather than stems. Three kinds of criteria have traditionally been considered. One is semantic: we expect nouns to be the names of objects and persons (*tree*, *child*), and verbs to denote events and states (*jump*, *live*). A second is morphological: we expect nouns to contain markers of such distinctions as gender, number, and/or case (*tree-s*), and verbs such markers as tense, and causation (*jump-ed*, *en-able*). A third is syntactic and pragmatic function: we expect nouns to serve as arguments of clauses (*The child jumped*) and verbs to predicate (*The tree fell*). In many languages, all three criteria converge to yield the same categorization: one group of words label entities, appear with plural suffixes, and serve as arguments; another denote actions, appear with tense suffixes, and serve as predicates. Not all languages show such consistent matches, however.

Languages of the Iroquoian family show a robust distinction between the morphological structures of nouns and verbs. Nouns show quite simple internal structure.

PREFIX	NOUN.STEM	NOUN.SUFFIX

FIGURE 2: NOUN STRUCTURE

The prefix indicates the gender of the referent or its possessor. The suffix simply identifies it as a noun. (Enclitics may follow.)

(26) SOME MOHAWK NOUNS — Mithun 1999a

kahnà:ta'	*akehnà:ta'*
ka-hna?t-a?	*ake-hna?t-a?*
NEUTER-purse-NOUN.SUFFIX	1SG-purse-NOUN.SUFFIX
'purse'	'my purse'

The morphological structure of verbs is considerably more complex, seen earlier in Figure 1. All verbs must contain a pronominal prefix, verb root, and aspect suffix.

PREPRONOM. PREFIXES	PRONOMINAL PREFIXES	REFLEXIVE PREFIX	NOUN STEM	VERB ROOT	DERIVATIONAL SUFFIXES	ASPECT SUFFIXES	FINAL SUFFIXES

FIGURE 1: NORTHERN IROQUOIAN VERB TEMPLATE

The number of affixes varies slightly across the Iroquoian languages, but most contain nearly a dozen prepronominal prefixes and around a dozen derivational suffixes.

(27) MOHAWK VERB — Warisose Horne, speaker

entsakwanenhstarón:ko'
ę-ts-ya-kwa-nęhst-rų-ko-?
FUTURE-REPETITIVE-1EXCLUSIVE.AGENT-PLURAL-corn-set-REVERSIVE-PERFECTIVE.ASPECT
'we will scrape the corn off the cob'

There is little overlap in morphological structure between nouns and verbs. Some of the gender and possessive prefixes on nouns resemble some of the pronominal prefixes on verbs, but in general the sets are formally and functionally different. Otherwise the noun and verb affixes are distinct, as are noun and verb roots and stems. It is thus a simple matter to determine whether a Mohawk word is a noun or a verb by looking at its morphological structure (Mithun 1999a).

Words with the morphological structure of nouns show meanings we expect of nouns. They name objects or persons like *kahnà:ta'* 'purse'. They are used syntactically as arguments of clauses. Words with the morphological structure of verbs may denote actions and states, liké *entsakwanenhstarón:ko'* 'we will scrape the corn off the cob'. They may function syntactically as predicates.

But morphological verbs show other meanings and syntactic uses as well. Many serve as descriptive labels for objects. These and others can function syntactically as nominals, cooccurring with determiners and serving as arguments of clauses.

(28) MOHAWK VERB USED AS NOMINALS — Karihwenhawe Lazore speaker

akaterohrókha?	*kí:ken*	*teióia'ks*
a:-k-ate-rohrok-ha-?	*kikę*	*te-yo-ya?k-s*
OPT-1AGT-MIDDLE-watch-DISLOCATIVE-PRF	this	DUPLICATIVE-NEUT.PATIENT-cut-IMPRF
I would watch	this	it flickers

'I would go to the movies.'

Morphological, semantic, and syntactic criteria sometimes yield the same lexical categorizations but not always, a fact which may have led to confusion on the part of some typologists (Sasse 1988, 1993). Some words show the morphological structure of verbs but the meanings and syntactic uses of nominals, such as *atátken* 'see oneself' = 'mirror'. Some morphological verbs are ambiguous, used sometimes to refer and to serve as arguments of clauses, sometimes to denote actions and to function as predicates, such as *teióia'ks* 'it flickers/movie'. And some morphological verbs serve only as predicates, such as *akaterohrókha'* 'I would watch'.

Probably the best-known discussions of the universality of the noun/verb distinction involve languages of the Wakashan, Salishan, and Chimakuan families of the Northwest Coast. Describing Kwak'wala and Nootka (Wakashan), Sapir remarked:

> In both, the stem is, as far as its meaning allows, indifferently verbal or nominal and one or more suffixes are required to give rise to definitely verb or nominal complexes; in Nootka a suffixed -'i' is often used to substantivize a verb form. (Sapir 1911c: 17/1991: 354)

In his 1921 book *Language*, he provided examples of words built on the Nootka root *ʔinikʷ-* 'fire/burn' showing that even these derived forms do not carry a categorial distinction. Each can occur as a word alone with either nominal or verbal meaning.

(29) NOOTKA STEMS WITH SUFFIXES — Sapir 1921b: 133-4

inikʷ-	'fire, burn'
inikʷ-ihl	'fire in the house, burn in the house'
inikʷ-ihl-ḿinih	'fires in the house, burn plurally in the house'
inikʷ-ihl-ḿinih-ʔis	'little fires in the house, burn plurally slightly in the house'
inikʷ-ihl-ḿinih-ʔis-it	'little fires that were once burning in the house'
	'several small fires were burning in the house'

Only certain optional endings, such as the article *-ʔi* or the third person indicative suffix *-(m)a*, overtly mark a distinction. Either may follow any of the forms above.

(30) NOOTKA CATEGORIZING SUFFIXES — Sapir 1921b: 134

inikʷ-ihl-ʔi	'the fire in the house'
inikʷ-ihl-ma	'it burns in the house'
inikʷ-ihl-ḿinih-ʔis-it-ʔi	'the former small fires in the house'
inikʷ-ihl-ḿinih-ʔis-it-a	'several small fires were burning in the house'

Swadesh made a similar observation about Nootka:

> One general type of word structure applies to all words with the exception of a limited number of particles. Normal words do not fall into classes like noun, verb, adjective, preposition, but all sorts of ideas find their expression in the same general type of word, which is predicative or non-predicative according to its paradigmatic ending. (Swadesh 1936-9: 78)

He provided the now famous examples in (31). Examples (a) and (b) show the stem 'man' serving first as a predicate and then as an argument. Examples (c) and (d) show the stem 'work' serving the same respective functions.

(31) NOOTKA — Swadesh 1936: 78

a. *qo·ʔasma ʔi·ḥʔi·*
he is a man the large
'The large one is a man.'

b. *ʔi·ḥma· qo·ʔasʔi*
he is large the man
'The man is large.'

c. *mamo·kma qo·ʔasʔi*
he is working the man
'The man is working.'

d. *qo·ʔasma mamo·kʔi*
he is a man the working
'The working one is a man.'

The indicative and article endings are not obligatory:

> 'Normal words [not particles] are equally usable with or without modal-paradigmatic endings and in any mode. In their function in the sentence, words are either predicative, expressing the nuclear predication of the sentence, or supplementational, referring to and expanding any of the notions expressed or implied in the predicative word. (Swadesh 1936: 79)

Jacobsen 1979a traces the history of the discussion and pursues the issue in greater depth, adding examples from Makah, another Southern Wakashan language. There is no question that the first words in sentences like those in (31) are functioning syntactically as predicates, and the words that follow as arguments (supplements). The question is whether major words can be assigned to lexical categories in isolation, apart from context. There is a clear division between major words and particles. Particles may not act as predicates. They include some conjunctions (*ʔis* 'and'), interjections (*ʔiškiḍa* 'ouch!'), independent pronouns (which are rare), demonstratives, and names. All other words, called major, normal, or inflectable words, may function as predicates. These include words translated as nouns, adjectives, numerals, adverbs, interrogatives, and prepositions. (Jacobsen does not segment the Makah forms.)

(32) MAKAH PREDICATES — Jacobsen 1979a: 110-2

a. *haʔu· q̓idi·liq.*
eat-INDICATIVE.3 dog-ARTICLE
'The dog is eating.'

b. *q̓idi·l*
dog-INDICATIVE.3
'It's a dog.'

c. *widi·sič̓ c̓apac̓iq.*
steady-INDICATIVE.3 canoe-ARTICLE
'The canoe is steady.'

d. *wi·yuc̓iq̓ c̓apac*
3-long.obj-INDIC.3 canoe
'There are three canoes.'

e. *hu·ʔaxis da·c*
still-INDICATIVE.3 see
'I can still see it.'

f. *wa·saqi·k ʔapta*
where-INTERR-2SG hide
'Where are you hiding?'

Jacobsen notes that both the indicative and the article are rare in connected speech in all of the Southern languages, so syntactic function is usually not overtly marked. (The Makah indicative appears as *-ʔ, -ʔi, -ʔu,* a change in the preceding consonant, or zero. The article appears as *-ʔiq,-ʔuq,* or *-iq* with possible consonantal change.)

He proposes that lexical categories can be distinguished within the class of major words as follows. Verbs are defined as those words which cannot serve as arguments of clauses without the article *-iq*; nouns may occur with the article but they need not. Verbs may appear in the iterative, repetitive, or momentaneous aspects; nouns are limited to the durative. Verbs may not carry the possessive suffix *-ʼu·c* (plural *-ʼu·c̓aɬ*) or the suffix *-i·c* 'belonging to, characteristic of'; nouns may.

Nouns may be marked as conditional or past, but if past tense nouns are used as arguments, they always carry either the article or a possessive suffix.

(33) MAKAH TENSED NOUNS — Jacobsen 1979a: 113-4

a. *baʔasʔu*
house-PAST-INDIC.3
'It was a house.'

baʔasʔuq
house-PAST-ARTICLE
'the former house'

baʔasitsis
house-PAST-1SG.POSSESSIVE
'my former house'

b. *q̓idi·ƛʔu*
dog-PAST-INDIC.3
'It was a dog.'

ʔusubas q̓idi·ƛqey
need-INDIC.1SG dog-COND.3
'I need a dog.'

q̓idi·ƛitsis
dog-PAST-1.SG.POSSESSIVE
'my former dog'

The Wakashan languages raise interesting questions about the nature of lexical categoriality. Jacobsen defines verbs as those words that *must* occur with an article when functioning as arguments. The function of the article has not been thoroughly investigated, but it is not a simple definite marker: it is often translated as definite, but sometimes as indefinite. Jacobsen treats it as a derivational nominalizer.

The primary function of the article could be analyzed slightly differently, as an optional specifier of syntactic structure, that is, a marker of argument status. It appears most often in contexts of potential ambiguity. Some words, like *ɬa·pχu·* 'fly', usually occur as predicates, so on the rare occasions when they function as arguments, the article would always appear to alert listeners to their unexpected role. Some stems, like *baʔas* 'house', usually occur as arguments, so they would be assumed to be arguments without overt specification. Other stems, like 'burn/fire', fall at various places along a continuum between the two extremes, serving sometimes as predicates,

sometimes as arguments. When serving as arguments, they would occur sometimes with, sometimes without the article, depending on the potential for misinterpretation of their syntactic function in a particular context.

Some words that would now be classified as nouns originated as idiomatic verb formations, but they show no overt nominalizer/article. They need not occur with an article because they are now expected to function as arguments.

(34) MAKAH LEXICALIZED NOMINALS — Jacobsen 1979a: 141

a. *baʔas*
dwell-on.ground
'house'

b. *babaɬdi*
dwell-moving-on.water
'white man'

Jacobsen notes the disambiguating effect of the particle in two-word phrases like those in (35), where the second element could be interpreted either as a part of a two-word predicate ('be a big man') or as an argument. 'The use of the article on the noun tends to disambiguate these two constructions' (1979a: 137).

(35) MAKAH ARTICLE AS A SPECIFIER OF SYNTACTIC STRUCTURE — Jacobsen 1979a: 137

a. *ʔi·ʔix̣ʷʔi ɬa·x̣uk*
big-INDIC.3 man
'It's a big man.'

b. *ʔi·ʔi·x̣ʷʔi ɬa·x̣uwiq̲*
big-INDIC.3 man-ARTICLE
'The man is big.'

An article on the first word of such constructions identifies the whole as an argument.

(36) MAKAH COMPLEX ARGUMENT — Jacobsen 1979a: 137

a. *ʔaƛʔi lu·lapi*
two-INDIC.3 hand
'There are two hands.'

b. *ʔaɬʔiq̲ kaca·yak*
two-ARTICLE snake
'the two snakes'

If the article *-ʔiq* is a specifier of syntactic structure rather than a morphological nominalizer, then it is not a direct marker of inherent lexical category. Its patterns of occurrence would reflect expectations about the relative propensity of a word to function syntactically as an argument. Category membership would be a matter of degree. A similar conclusion has been reached for Nootka by Nakayama (1997). The fact that certain words never appear in the iterative, repetitive, or momentaneous aspects, and others never appear in possessive constructions, could be attributed to semantic incompatibility rather than formal grammatical or lexical class (Swadesh 1939, Rose 1981).

Similar issues have been raised for Salishan languages. Kinkade (1983a) writes:

> Only predicates and particles can be distinguished . . . But whether looked at morphologically, syntactically, semantically, or logically, and whether at a surface or deep level, the notions 'noun' and 'verb' (as well as other traditional parts of speech) are not relevant in Salish. A Salishan sentence contains at least a predicate, which may be inflected for pronominal subject and/or object (as well as aspect, control, transitivity, etc.). An overt subject or object may be expressed by adding another predicate in apposition to the pronominal elements affixed to the main predicate. (Kinkade 1983a: 25)

Analyses of clauses as sequences of predicates in various languages appear in Kuipers 1968, Saunders & Davis 1975c, Hukari 1976a, 1980, Kinkade 1976a, Thompson & Thompson 1980, Davis & Saunders 1981, Demers & Jelinek 1982, 1984, Jelinek & Demers 1982, 1994, Thompson & Kinkade 1990: 33-4, and Jelinek 1993, 1995.

Kinkade first discusses the lack of any morphological grounds for distinguishing nouns and verbs. Most Salishan languages contain prefixes for aspect, time, or position, and suffixes indicating control, transitivity, redirection and objects (including reflexives and reciprocals), as well as the lexical suffixes described in section 2.2.4. There are reduplicative distributives and plurals. All can occur on all full words, both main predicates and complements or adjuncts.

Any full word may serve as the predicate of a sentence. These include words typically translated as English verbs, adjectives, adverbs, nouns, pronouns, and even names. The main predicate appears sentence-initially in unmarked contexts.

(37) VARIOUS SALISHAN PREDICATES — Kinkade 1983a: 27-9

a. Bella Coola *xɬsx-c-s*
dislike-me-he
'he dislikes me'

b. Columbian *q̓áʔxn*
q̓áʔ-xn-nt-t
wedge.in-foot-TRANSITIVE-1SG
'I put a shoe on him'

c. Columbian *ʔincá=kn staʔáwna*
I=1SG Staʔáwna
'I am Staʔáwna.'

d. Spokane *ppátiqs ɬu skʷés-t-s*
Ppátiqs that name-STATIVE-his
'Ppátiqs was his name.' (from Barry Carlson)

A key element in the discussion is the nature of aspectual markers. Kinkade reports that in Upper Chehalis, all main predicates must be marked for one of three aspects: continuative, stative, or completive. Continuatives typically show gerund-like meanings: *s-q̓ʷə́t̓wn* 'it is burning, (the) burning'. When preceded by a deictic particle, continuatives are typically translated as nouns: *tit sq̓ʷə́t̓wn* 'the burning, the fire'. Some stems have only continuative forms, such as *s-ƛ̓aláš* 'deer, it is a deer'. Kinkade notes that such forms are so abundant in Salishan languages that the prefix *s-* has often been interpreted as a nominalizer, though it is better understood as an aspect. Upper Chehalis words inflected for the stative aspect are usually translated as English nouns denoting the product or result of an event. When identifying a subject or object, they are usually preceded by a deictic particle.

(38) UPPER CHEHALIS STATIVE — Kinkade 1983a: 30

ʔit	*wáɬ-t̓aq-n*	*tat*	*ʔac-mə́lkʷ-ɬ*
DEFINITE.NEAR	loosen-tie-he	DEFINITE.DISTAL	CONTINUATIVE-wrap-INTRANSITIVE

'He unwrapped the package.'

Kinkade then proposes that there are also no syntactic grounds for a noun/verb distinction. Clauses consist of a main predicate optionally supplemented with embedded predicates. Each may be accompanied by particles. The main predicate is grammatically complete in itself, containing pronominal specification of subjects and objects. (Third person absolutives are usually zero.) The embedded predicates are appositional to material specified in the main predicate. As further evidence of the predicate status of these words, Kinkade points to translations of Coeur d'Alene written by Lawrence Nicodemus, a native speaker. Nicodemus systematically translates words identifying subjects and objects as clauses.

(39) COEUR D'ALENE TRANSLATIONS — Lawrence Nicodemus 1975a cited in Kinkade 1983a

x̣es-iɬc̓eʔ	*xʷe*	*c̓iʔ*
good-flesh	the	deer

'They are good to eat those which are deer.' Nicodemus
'Venison is delicious.'

Kinkade proposes that the particles translated as articles are not actually determiners or word-class markers, but rather general deictics conveying notions of time and space. They may precede both main predicates and embedded ones, like *ʔit* in (38).

Van Eijk & Hess 1986 maintain that there are nevertheless certain formal criteria for differentiating noun and verb classes in some if not all Salishan languages. Their examples come from Lillooet, an Interior Salishan language, and Lushootseed, a

Coast language. They define nouns as those words that can take possessive affixes ('father', 'land', 'house') and verbs as those that cannot ('sing', 'eat', 'bring', 'inform').

(40) STEMS AND POSSESSION — van Eijk & Hess 1986: 321

Lillooet	*sqácza?*	'father'	Lushootseed	*bád*	'father'
	n-sqácza?	'my father'		*d-bád*	'my father'
	tmix^{w}	'land'		*ʔálʔal*	'house'
	n-tmix^{w}	'my land'		*d-ʔálʔal*	'my house'
But	*ʔiɬəm*	'to sing'		*ʔəɬəd*	'to eat'
	ɬíqxal	'to bring'		*yácəb*	'to inform'

They analyze the prefix *s-* as a nominalizer. Verbs may be nominalized and then inflected for possession.

(41) NOMINALIZED VERBS — van Eijk & Hess 1986: 322

Lillooet	*ʔiɬəm*	'to sing'	Lushootseed	*ʔəɬəd*	'to eat'
	s-ʔiɬəm	'song'		*s-ʔəɬəd*	'food'
	n-s-ʔiɬəm	'my song'		*d-s-ʔəɬəd*	'my food'

The analysis of *s-* as a nominalizer brings van Eijk & Hess to a second morphological distinction between nouns and verbs. Only verbs (stems that cannot appear with a possessive affix) can undergo aspectual operations. Nouns cannot. (A verb with aspectual marking may subsequently be nominalized.) Among the Lillooet aspects are a continuative, indicated by reduplication of a posttonic consonant (*puɬ-* 'to be boiled', *púɬ-əɬ* 'to be boiling'); an inchoative, indicated by a posttonic glottal infix (*zax̌*^{w}- 'melted', *zaʔx̌*^{w} 'to melt'); and a stative *s-*: *s-puɬ* 'boiled, to be in a boiled state'. Van Eijk and Hess emphasize that this prefix is distinct from the nominalizer *s-*. Stative verbs like *s-puɬ* cannot occur with possessive affixes. Among the Lushootseed aspects are a punctual *ʔu-* as in *ʔu-ʔítut* 'fall asleep', a progressive *ləs-* as in *ləs-ʔítut* 'being moved while sleeping', and a stative *ʔəs-*, as in *ʔəs-ʔítut* 'asleep'. They do note that other morphological operations may be applied to both nouns and verbs, such as reduplication for plurality, collectivity, repetition, or intensity.

Van Eijk & Hess point out, however, that the morphological distinction between nouns and verbs is irrelevant for syntactic structure. Predicates are formed by combining stems with subject markers, suffixes in Lillooet and clitics in Lushootseed. In Lillooet, the same subject suffixes occur with noun stems and intransitive verb stems. In Lushootseed, all subject clitics are the same. (Third persons are unmarked.)

(42) PREDICATIONS — van Eijk & Hess 1986: 323

Lillooet		Lushootseed	
sqáyx^{w}*-kan*	'I am a man'	*stúbš čəd*	'I am a man'
ɬák-kan	'I go'	*ʔúx*^{w} *čəd*	'I go'
ɬak	'(he/she) goes'	*ʔux*^{w}	'(he/she) goes'

Both noun stems and verb stems can serve either as a main predicate or to identify a subject or object. A deictic particle precedes them in this second function.

(43) FULLER SENTENCES — van Eijk & Hess 1986: 324

Lillooet

ɬak ti=nḵyáp=a
go ARTICLE=coyote=ARTICLE
'The coyote goes.'

nḵyap ti=ɬák=a
coyote ARTICLE=go=ARTICLE
'The one who goes is a coyote.'

Lushootseed

ʔúx^{w} *ti sbiàw*
go ARTICLE coyote
'The coyote goes.'

sbiáw ti ʔùx^{w}
coyote ARTICLE go
'The one who goes is a coyote.'

Possessed nouns, like other noun stems, may function syntactically as main predicates.

(44) POSSESSED NOUNS AS PREDICATES — van Eijk & Hess 1986: 325

Lillooet

n-snúḵ^{w}*a?-ɬkax*^{w}
my-friend-you
'You are my friend.'

Lushootseed

d-qsíʔ čəx
my-uncle you
'You are my uncle.'

Transitive verbs, like intransitives, may identify subjects and objects.

(45) TRANSITIVE VERBS AS COMPLEMENTS — van Eijk & Hess 1986: 324

Lillooet

sqayx^{w} *ti=nuḵ*^{w}*ʔan-c-ás=a*
man ARTICLE=help-me-he=ARTICLE
'The one who helped me is a man.'

Lushootseed

stúbš ti kʷàxʷa-c
man ARTICLE help-TRANS.me
(same)

The issue of lexical categories in Northwest languages remains a lively topic of discussion. N. Mattina 1996 presents extensive evidence of a noun/verb distinction in Okanagan. Formal treatments of the question appear in Jelinek & Demers 1994, Dermirdache & Matthewson 1995, Jelinek 1995, and elsewhere.

3

Grammatical categories

A subtle but pervasive way in which languages differ is in the distinctions they allow speakers to express easily and those they require speakers to observe in order to speak grammatically. In most cases, speakers of English must use a full clause if they care to specify the source of the information they are relating (*I hear that ...*), while speakers of Central Pomo routinely specify the nature of their evidence in a single unstressed syllable. English and Mohawk speakers must specify the gender of persons under discussion, while Finnish and Yup'ik Eskimo speakers need not.

Such differences are not accidental. Grammatical categories result from language use. Those distinctions speakers have chosen to express the most often over the development of the language eventually become routinized. Forms expressing them may become eroded with use, reduced from full words to affixes. Their meanings may evolve as they are applied in more contexts, often becoming more general or abstract. On occasion the sources of grammatical markers can still be seen. Talmy Givón reports, for example, that a third person plural prefix in Tolowa, a California Athabaskan language, has evolved from a word meaning 'all' (p.c. 1997. Instrumental prefixes meaning 'with the hand' in Haida and Northern Paiute have evolved into general causative prefixes (Hirofume Hori p.c. 1997, Tim Thornes p.c. 1997).

Some grammatical distinctions are common cross-linguistically, arising out of the kinds of concerns shared by most human beings. Others are more unusual, reflecting aspects of the special natural environment and cultural traditions of speakers. Exploring the variety of grammatical distinctions embodied in different languages provides an opportunity to glimpse the kinds of conceptual distinctions available to the human mind. This chapter focuses on categories in various North American languages that are relatively unusual cross-linguistically, such as those reflecting distinctions of empathy, shape, and control, and on certain grammatical subsystems that are unusually well developed, such as those specifying space, means, and evidentiality. Some of the grammatical distinctions are marked in unusual areas of grammatical structure, such as number on verbs and tense on nouns. As will be seen, the locus of grammaticization is linked to subtle differences in function.

3.1 Person

The term 'person' has traditionally been used for distinguishing the speaker (first person), the addressee (second person), and those spoken about (third person). Distinctions of person are usually made in pronouns, whether they are separate words as in English, or affixes as in Mohawk, an Iroquoian language.

(1) PERSON DISTINCTIONS IN MOHAWK

VERBS	FIRST PERSON	*k-hiá:tons*	'I am writing'
		iakwa-hiá:tons	'we (PLURAL) are writing'
	SECOND PERSON	*s-hiá:tons*	'you are writing'
		sewa-hiá:tons	'you (PLURAL) are writing'
	THIRD PERSON	*ie-hiá:tons*	'she is writing'
		konti-hiá:tons	'they (PLURAL F) are writing'
		ra-hiá:tons	'he is writing'
		rati-hiá:tons	'they (PLURAL M) are writing'
NOUNS	FIRST PERSON	*k-hnia'sà:ke*	'my throat'
		iakwa-hnia'sà:ke	'our (PLURAL) throats'
	SECOND PERSON	*s-hnia'sà:ke*	'your throat'
		sewa-hnia'sà:ke	'your (PLURAL) throats'
	THIRD PERSON	*ie-hnia'sà:ke*	'her throat'
		konti-hnia'sà:ke	'their (PLURAL F) throats'
		ra-hnia'sà:ke	'his throat'
		rati-hnia'sà:ke	'their (PLURAL M) throats'

(Mohawk contains additional pronominal distinctions as well.)

Many languages have no third person pronouns. Third persons are referred to either by a full noun phrase, by a demonstrative ('that one'), or, when their identity is clear from context, by no form at all. In many cases third person pronouns can be seen to have developed historically from demonstratives.

Two additional categories of person recur in a number of North American languages. Many languages distinguish inclusives ('you and I') from exclusives ('he/she/they and I'). Some languages are said to contain a fourth person, though this label has been applied to several quite different kinds of categories. One is a type of long-distance reflexive. Another is a secondary third person termed an obviative.

3.1.1 *Inclusive and exclusive*

The inclusive/exclusive distinction was probably noticed first in the sixteenth century by grammarians of Inca and Aymawa (Haas 1969e). It is pervasive in North America but not restricted to the Americas. Both inclusive and exclusive pronouns refer to the speaker plus others ('we, us, our'). Inclusives include the addressee ('you and I'); exclusives exclude the addressee ('he/she/it/they and I'). Inclusives thus represent a combination of first and second persons (1+2), exclusives of first and third (1+3).

(2) INCLUSIVE AND EXCLUSIVE IN MOHAWK

INCLUSIVE DUAL	*teni-hiá:tons*	'we two (you and I) are writing'	(1+2) DU
INCLUSIVE PLURAL	*tewa-hiá:tons*	'we all (you all and I) are writing'	(1+2) PL
EXCLUSIVE DUAL	*iakeni-hiá:tons*	'we two (s/he and I) are writing'	(1+3) DU
EXCLUSIVE PLURAL	*iakwa-hiá:tons*	'we all (they and I) are writing'	(1+3) PL

Viewed as whole systems, pronominal paradigms in many languages show structural evidence that inclusives should be analyzed as an additional category of person. Lakhota, for example, a Siouan language of the Plains, contains pronominal prefixes for first and second persons but not third. The inclusive prefix *ų-* patterns like the first and second person singular prefixes and refers to one speaker-hearer unit.

(3) LAKHOTA PRONOMINAL PREFIXES — Stanley Redbird, speaker

wa-lówą	'I'm singing'
ų-lówą	'you and I are singing'
ya-lówą	'you're singing'
lową́	'sing, (he or she) is singing'

Plurality is marked with a verbal suffix *-pi*. In combination with an inclusive pronoun, it yields a form referring to the speaker-hearer unit plus additional people, more listeners ('you all and I'). The same combination is used for exclusive plural 'we all'.

(4) LAKHOTA PLURALS — Stanley Redbird, speaker

ųlówą-pi	'you all and I are singing', 'he/she/they and I are singing'
yalówą-pi	'you (two or more) are singing'
lową́-pi	'they (two or more) are singing'

In many cases the historical origin of the inclusive/exclusive distinction can still be discerned. In Algonquian languages like Cree, the inclusive is a hybrid. First and second persons are specified by verbal prefixes.

(5) PLAINS CREE FIRST AND SECOND PERSON PREFIXES — Monica Brown, speaker

ni-nipa:-n	'I am sleeping'
ki-nipa:-n	'you are sleeping'

Plurality is marked by suffixes. The regular plural of first person is an exclusive.

(6) PLAINS CREE PLURAL SUFFIXES — Monica Brown, speaker

ni-nipa:-na:n	'we (EXCLUSIVE) are sleeping'
ki-nipa:-na:waw	'you all are sleeping'

The inclusive is formed from the second person prefix plus a combination of plurals.

(7) PLAINS CREE HYBRID INCLUSIVE — Monica Brown, speaker

ki-nipa:-na:naw	'we (INCLUSIVE) are sleeping'

In Siuslaw of Oregon, both the inclusive and exclusive suffixes contain the first person *-n* plus number markers. The inclusive forms add the dual suffix for second person (*-s*) or a plural. The exclusive forms add the dual and plural suffixes for third (*-a^{w}x, -nx*).

(8) SIUSLAW EXCLUSIVE — Frachtenberg 1922: 468

	SINGULAR	DUAL	PLURAL
FIRST PERSON	*-n*		
INCLUSIVE		*-ns*	*-nł*
EXCLUSIVE		*-a^{w}xun*	*-nxan*
SECOND PERSON	*-nx*	*-ts*	*-tšî*
THIRD PERSON	---	*-a^{w}x*	*-nx*

In some languages, indefinite pronouns meaning 'someone' are used for inclusives, as in Caddo of Oklahoma. The inclusives consist of indefinite 'someone' plus dual or plural prefixes. In (9), the indefinite is *di-*, the dual *-wís-*, and plural *-wa-*.

(9) CADDO INDEFINITE FOR INCLUSIVE — Chafe 1990: 60-7

cí-··báwnah	'I have seen it'
cí-wís-báwnah	'we two (DUAL EXCLUSIVE) have seen it'
cí-i-wa-báwnah	'we all (PLURAL EXCLUSIVE) have seen it'
dí-··báwnah	'someone has seen him' = 'he has been seen'
dí-wísbáwnah	'we two (DUAL INCLUSIVE) have seen it'
dí-iwabáwnah	'we all (PLURAL INCLUSIVE) have seen it'

There is often a special relation between inclusives and duals. In Lakhota the basic inclusive category was grammatically singular but it referred to a pair, the speaker and addressee. In the Miwok languages the inclusive independent pronouns are descended from stems for 'two' (Jacobsen 1980a: 213).

The inclusive/exclusive distinction appears across the continent in many different families, including Algonquian, Iroquoian, Siouan, Caddoan, Yokutsan, Maiduan, Wintuan, Palaihnihan, and Chinookan, and in isolates Yuchi, Washo, Yuki, Chimariko, Coos, Siuslaw, Alsea, and others. It many cases it appears in just some languages of a family. Within Muskogean, it appears only in Choctaw, within Kiowa-Tanoan only in Kiowa, within Uto-Aztecan only within the Numic branch and Tübatulabal, within Utian only in the Miwok branch, within Sahaptian only in Sahaptin, within Salish only in Shuswap, and within Wakashan only in the Northern branch.

In his 1980 article, Jacobsen demonstrates that much of the areal distribution of the distinction is probably the result of diffusion. The inclusive would be an easy category to borrow, since it has a self-contained meaning, not intertwined with complex grammatical patterns as is case. It occurs in all languages of the Great Basin culture area (Nevada and adjacent California, Oregon, Idaho, Utah, Wyoming, Colorado, and New Mexico), and in languages contiguous with them. The Great Basin languages include those of the Numic branch of Uto-Aztecan (Northern Paiute, Central Paiute, Southern Paiute, Kawaiisu, Ute, Shoshone) and the genetically unrelated Washo. Immediately west of the Numic languages and Washo, in the Sierras and San Joaquin Valley of California, are the unrelated Palaihnihan languages Achumawi, Atsugewi, the Maiduan, Miwok, and Yokutsan languages, and the non-Numic Uto-Aztecan language Tübatulabal. Bordering Maiduan are Wintuan and Yuki. Languages to the south, west, and north, though genetically related, lack the distinction. It appears again in another cluster of unrelated languages on the Oregon coast, Coos, Siuslaw, and Alsea, then again further north along the Columbia River in the Chinookan family and the unrelated but contiguous Sahaptin, which in turn borders the Numic language Northern Paiute. Finally, still further north, the distinction appears in Northern Wakashan (so Kwakwala and others but not Nootka) and Shuswap (though no other Salish languages). Jacobsen proposes that it spread from Kwakwala to Shuswap at a time when the two languages were contiguous, before an intrusion from the North by the Athabaskan Chilcotin. It is possible that at least some of the inclusive categories in the Algonquian, Iroquoian, Siouan, Caddoan families, and perhaps Yuchi, Choctaw, and Kiowa, could be due to contact as well.

It is important to note that it is not the forms that have been borrowed, but rather the concept of an inclusive category. The forms do not match across the languages, but in many cases sources for the new patterns can be found within the languages themselves.

3.1.2 *Long-distance coreference and empathy*

Reflexive constructions, which mark coreference between the subject and another argument of clauses, appear throughout North America, as elsewhere: Mohawk *wa'katátken* 'I saw myself'. Some languages also contain devices for specifying coreference over longer stretches of speech, termed variously fourth persons, long-distance reflexives, coreferential third persons, logophoric pronouns, and more. Examples of such structures can be seen in languages of the Eskimo-Aleut family.

In Central Alaskan Yup'ik, as in related languages, all verbs contain pronominal suffixes referring to their core arguments, one for intransitives and two for transitives. Possessed nouns contain suffixes referring to the possessor and the possession.

(10) YUP'IK PRONOMINAL SUFFIXES — Elizabeth Ali, speaker

paqetanka	*ilanka*
paqete-a-nka	*ila-nka*
visit-INDICATIVE-1SINGULAR/3PLURAL	relative-1SINGULAR/3PLURAL
'I visited them'	'my relatives'

The pronominal suffixes always appear on verbs, whether or not independent nouns appear in the sentence as well. The verb and noun in (10), for example, could be combined into a sentence. Gender is not distinguished in Yup'ik, so the same pronominal forms are used for males, females, and objects. There are two different third person categories however, one basic and one for arguments coreferent with the subject of the matrix clause. The second appears twice in the second line of (11).

(11) YUP'IK COREFERENTIAL THIRD PERSON — Elizabeth Ali, speaker

Tuai-llu-gguq	*tauna*	*tutgara'urluq,*
tuai=llu=gguq	*tauna*	*tutgar-'urlur*
so=too=HEARSAY	that	grandchild-dear

'And so that dear grandchild,

apa'urluni	*kenekengamiu*
apa-'urlur-ni	*keneke-nga-miu*
grandfather-dear-3R.SG/3SG	love-CONSEQUENTIAL-3R.SG/3SG

because she (herself) loved her (own) grandfather,

neqkanek	*assilrianek,*	*paiveskii,*
neqkaq-nek	*assir-lria-nek*	*paivte-ke-ii*
prepared.food-ABLATIVE.PL	good-NM-ABLATIVE.PL	put.out-PARTICIPIAL.TR-3SG/3PL

she was setting out good foods [on his plate].'

The subject of the main clause in (11) is the grandchild. She is referred to by a basic third person pronoun in the main verb *paiveskii* 'she put them out'. In the embedded clause, 'because she loved her grandfather', she is referred to by the coreferential pronoun because the subject of this subordinate clause is the same as that of the main clause. The coreferential pronoun appears in 'her grandfather' as well, indicating that the possessor of the grandfather is the same individual as the subject of the clause in which it occurs: 'she$_i$ loved her$_i$ grandfather'. (Basic reflexives are expressed in a different way in Yup'ik.)

Similar systems can be found in the unrelated Pomoan languages of northern California (O'Connor 1984, 1986, 1990, 1992, Mithun 1990) and adjacent Wappo (Thompson & Li 1993). Central Pomo does not distinguish gender, but there are two sets of third person pronouns, a basic set built on the demonstrative *mu·l* 'that', and a special set built on the root *ɻi·*. The special set is used for arguments that are coreferential with the subject of their clause or a higher clause. In (12)a the possessive pronoun based on *mu·l* is used, but in (12)b the special pronoun based on *ɻi·* is used, because the possessor is the same as the subject of the sentence.

(12) CENTRAL POMO POSSESSIVE PRONOUNS — Florence Paoli, speaker

a. *Mu·kʰeɻ́* *našóy* *ʔdóma,* *Cedric Jack* *ʔe,* *ʔdúw.*
3POSS young.lady they say it.is marry
'They say her daughter married Cedric Jack.'

b. *Mú·ɻuya* *ʔmu·l* *ɻíya·ʔkʰeɻ́* *čá·č́* *ló·hc̆w*
they that 3PL.EMPATHETIC.POSS people help

dá·ʔc̆w *čʰów* *ʔmu·l.*
want not that
'They don't want to help their own people.'

The special forms are also used for arguments of embedded clauses that are coreferential with the subject of a higher clause, as in (13). (Continuing topics, like the 'she' here, are not reidentified in every clause.) The *ɻi·* form was used here because it was coreferential with the subject of the matrix verb 'say'.

(13) CENTRAL POMO COREFERENT PRONOUN — Frances Jack, speaker

ɻí·ɻo *baptizečikaw* *dá·ʔduw* *híhduw*
3EMPATHETIC.PATIENT be.baptized want claim
'[She] said [she] wanted [herself] to be baptized.'

Pronouns of this type have sometimes been called 'logophoric' (O'Connor 1986); they typically appear in constructions describing a speaker's words, as in (13). In Central Pomo the sentence representing the speaker's words need not actually be syntactically embedded. Each of the lines in (14) was spoken as an independent sentence, and each is fully grammatical in its own right. Yet the subject of each is a *ɻi·* pronoun.

(14) CENTRAL POMO SPECIAL PRONOUN WITHOUT EMBEDDING — Frances Jack, speaker

ɻíya· *do·* *hínɻil* *čanú* *šá·ɻay* *dá·ʔc̆w.*
3PL.EMPATHETIC QUOTATIVE Indian word know want
'They (EMPATHETIC) want to know Indian.

ɻíya *bayí·č́* *dá·ʔc̆w.*
3PL.EMPATHETIC learn.orally want
They (EMPATHETIC) want to learn.

ḱúči· *ʔmú·ɻuya* *lówa·c̆a.*
children 3PL say
That's what the kids are saying.'

The special *ɻi·* pronouns are used for persons whose point of view is being represented. They are in this sense empathetic. They are typically used to relate information that people have said about themselves, as in (13) and (14), so they often occur with the quotative evidential *do·* as in (14), but there need not be any overt specification of speaking or thinking. In (15) the speaker used the empathetic *ɻi·* for some people when she was presenting their feelings, but a few lines later, when she was viewing them with disdain, she shifted back to the basic *mu·l* pronoun.

(15) CENTRAL POMO PRONOUN ALTERNATION WITH POINT OF VIEW — Salome Alcantra, speaker

Meɻ́ *ma·* *ɻíya* *ʔú·da·w* *q̓dí* *ɻ̓á·ʔc̆w.*
such stuff 3PL.EMPATHETIC very good feel
'They (EMPATHETIC) were feeling pretty good about that.

Mil *má·ʔwi* *ɻʰin=wa*
at.that tomorrow not=Q
The next day, wasn't it

ma· *qaɬsé·ʔyaw* *yhétaq́* *ʔe* *mú·ɻuya*
stuff nasty do it.is 3PL
they (BASIC) were doing something nasty.'

3.1.3 *Obviation*

Another category sometimes referred to as 'fourth person' is the obviative. The term *obviatif* was first coined in French by Cuoq (1866: 43 cited in Goddard 1990: 56) in his description of a language of the Algonquian family, where the category is best known and has been most widely discussed. Obviation has been noted in some other North American languages as well, particularly Kutenai (Dryer 1991, 1992) and Keres (Davis 1964: 76, Miller 1965: 124). It is a device for distinguishing third persons.

In languages with the distinction, one third person is categorized as the proximate and all others as obviatives. The proximate is typically the person from whose point of view events are described, the protagonist in narratives, the focus of the speaker's empathy. Human beings are usually preferred over animals for proximate status, and animals over inanimate objects. Proximate and obviative categorization must be constant through a clause, and they tend to be preserved over longer stretches of speech, such as episodes in a narrative where the proximate is a discourse topic.

In Algonquian languages the distinction between proximate and obviative is indicated on nouns (where the proximate is unmarked and obviatives bear a suffix), on demonstratives, and by pronominal affixes on verbs.

(16) OBVIATION IN OJIBWA (CENTRAL DIALECT) Jones 1917: 170 cited by Rhodes p.c. 1986

Ogii-biindoomonan	*iniw*	*anishnaaben*	*ahaw*	*Misaabe*
3-carry.in.garment-3OBV	those-OBV	people-OBV	that	Giant

'Giant (PROXIMATE) carried people (OBVIATIVE) in the fold of his garment.'

Proximates are not the same as subjects, as can be seen in (17).

(17) OBVIATION IN OJIBWA (EASTERN DIALECT) Bloomfield 1958 cited in Rhodes 1990: 107

Maaba	*dash*	*shkinwe*	*wgii-bwaadaan*
maaba	*dash*	*oshkinawe*	*o-gii-bawaad-am-n*
this	EMPHATIC	young.man	3-PAST-dream-3INAN-OBV

'Then this (PROXIMATE) young man (PROXIMATE) dreamed (PROXIMATE) that

wii-bi-yaanid	*myagi-nishnaaben*	*waa-bi-nsigwaajin.*
wii-bi-ayaa-ini-d	*mayagi-nishanaabe-an*	*x-wii-bi-nis-igo-waa-d-in*
FUT-coming-be.at-OBV-3	foreign-people-OBV	REL-FUT-coming-kill-INVERSE-3-OBV

foreigners (OBVIATIVE) would come (OBVIATIVE) to kill (OBVIATIVE) them (PROXIMATE).'

In certain syntactic contexts speakers have no choice in the assignment of proximate and obviative status, such as possessive constructions. Possessors may be proximate or obviative, but their possessions are always obviative (secondary to them).

(18) POSSESSION IN OJIBWA (OTTAWA DIALECT) Richard Rhodes p.c. 1986

gimaa	*w-gwis-an*
chief	3-son-OBVIATIVE

'the chief (PROXIMATE)'s son (OBVIATIVE)'

An issue in the study of obviation has been whether it should be considered primarily a sentence-level syntactic mechanism or a discourse-level device. Delisle 1973, Dunnigan, O'Malley & Schwarz 1978, and Grafstein 1981 have argued for a syntactic analysis, while most others, including Bloomfield 1962, Goddard 1984, 1990, Dahlstrom 1991, and Pustet 1995 have described it in discourse-level terms. Rhodes 1990 proposes that languages and even dialects may differ in this respect. Under a sentence-level analysis, the subject of the main clause would automatically be assigned proximate status (unless it is a possession), and all other third person arguments would be obviative. Proximate status would be assigned anew with each sentence, so every sentence should contain a proximate argument, and we should not be surprised to see frequent shifts in the identity of the proximate from sentence to sentence. If obviation is considered instead to distinguish a discourse-level topic (the proximate) from all others, we should expect a certain continuity of proximate choice over longer stretches of connected speech, and it should be possible to find sentences containing only obviatives. Rhodes observes that the various Ojibwa dialects, as well as the various Algonquian languages, can differ in just these ways.

Obviation in the Ottawa dialect of Ojibwa is analyzed as a sentence-level syntactic phenomenon. The proximate argument is selected anew with each sentence. The status of a given participant, like the young man in the text in (19), can thus shift back and forth rapidly between proximate and obviative, sentence-by-sentence. In this example, proximates are in boldface and obviatives are underscored.

(19) SENTENCE-LEVEL OBVIATION IN OTTAWA Bloomfield 1957: 213, cited by Rhodes p.c. 1986

Bezhig nini gii-mkadekegban.
'Long ago **a man** (PROXIMATE) fasted.

Aw kiwenzu gii-zhitood wiigwaamens waa-dzhi-mkadekenid niw wgwisan.
An old man (PROX) had built a little hut where **his** (PROX) son (OBV) would fast.

Gaa-giizhtoos dash mii gii-webi-mkadeked aw shkinwe.
After **he** (PROXIMATE) got ready, **the young man** (PROXIMATE) started to fast.

Pane biindig gii-yaa-∅, gye go gii-weshho-∅ gkizhe wmaanwaang.
He (PROXIMATE) went into the hut, and painted **his** (PROXIMATE) face with charcoal.

Niibna dsogon gii-yaa-∅ maa wiigwaamensing, gii-baabiitood iw gegoo ji-naabndang
He (PROXIMATE) spent many days in the hut, waiting to see something.

Enso-ggizheb dash gii-zhaa-∅ maaba kiwenzii ko gii-ggwejmaad
Every morning, **the old man** (PROXIMATE) came to ask

niw wgwisan nmanj iidig gaa-naabndamnigwen.
his (PROXIMATE) son (OBVIATIVE) if he (OBVIATIVE) had seen anything.

Wgii-gnahmawaan niw wgwisan gaa wii nkwetwaasik niw bi-ggwejmigod
He (PROXIMATE) warned **his** (PROXIMATE) son (OBVIATIVE) not to answer the well-

mandaagninwan iw ji-zhwenmigod.
dressed man (OBV) coming to ask him (OBV) if he (OBV) might bless him (OBV).'

The Southwestern dialect of Ojibwa exemplifies discourse-level obviation. The discourse topic *Nenabozh* remains proximate over the entire passage in (20). Furthermore, some sentences contain no proximates at all (lines 2, 4, 5, 6).

(20) DISCOURSE-LEVEL OBVIATION IN SW OJIBWA Jones 1917: 257 cited by Rhodes p.c. 1986
Nenabozhoo omaa nawaj igo noopiming ezhiazaadiisagokaazod.
'There towards the woods **Nenabozh** (PROXIMATE) turned into a poplar.

Zhigwa bi-ishpagoojinoon iniw giizisoon.
The sun (OBVIATIVE) rose high.

Owaabandaan gagizhibaajiwaninig ihiw zaagahigan.
He (PROXIMATE) saw the lake (OBVIATIVE) with ripples circling out.

Nitam omakakiin mooshkamowan, gaye go anooj igo ihiw isa manidooh.
First the frog (OBVIATIVE) surfaced, and then various other spirits (OBVIATIVE).

Gakina awiya mii go ihiw bemi-izhi-agwaataanid ihimaa minisinataawangaanig.
They (OBVIATIVE) all came out of the water onto that sandy island (OBVIATIVE).

Mii go iw bimi-nimi-nibaanid aanind.
And some (OBVIATIVE) went to sleep there.'

Good discussions of the use of obviation are in Goddard 1990 and Russell 1991.

3.2 Number

The number distinctions most familiar to us from European languages are singular and plural contrasts on nouns and pronouns: *stone/stones* and *I/we*. Number in Indo-European languages is an inflectional category, a distinction that must be specified every time countable objects are mentioned. Somewhat similar systems can be found in some North American languages, but they are not the norm.

3.2.1 *Inflectional number on nouns*

Inflectional number on nouns does occur in a few North American languages. In Zuni, for example, a language isolate spoken in New Mexico, all nouns must be marked as either singular or plural.

(1) INFLECTIONAL NUMBER ON ZUNI NOUNS Newman 1965: 56

lu-ʔleʔ	'ash'	*lu-weʔ*	'ash-es'
ča-ʔleʔ	'child'	*ča-weʔ*	'child-ren'

Some Zuni nouns referring to masses or abstractions occur only in the plural, such as *ǩa-weʔ* 'water', *luho-·weʔ* 'dust', and *cema-·weʔ* 'thoughts'.

Number is distinguished in Zuni on pronouns as well: *hoʔ* 'I', *toʔ* 'you (SINGULAR)', *hon* 'we', *ton* 'you all' (Newman 1965: 60). It is further reflected in verbs by concord. Plurality of objects and intransitive subjects (absolutives) is marked by prefixes, and plurality of ergatives by a suffix. In (2)a, the noun *ča-* 'child' carries a singular suffix *-ʔleʔ*. In (2)b, it carries the plural suffix *-weʔ* and the verb a plural prefix *ʔa·w-*.

(2) NUMBER CONCORD ON ZUNI VERBS Newman 1965: 74

a.	*yam*	*ča-ʔleʔ*	*hoʔ ʔotenna*	'I made my child dance'
b.	*yam*	*ča-weʔ*	*hoʔ ʔa·w-otenna*	'I made my children dance'

Languages of the Algonquian and Eskimo-Aleut families also show obligatory number distinctions in both nouns and pronouns. In these languages, the pronouns are suffixes attached to the verb. In the Algonquian languages, nouns and pronominal affixes systematically distinguish two categories: singular and plural. Some of the Eskimo-Aleut languages, including Central Alaskan Yup'ik, show three number categories: singular (for one), dual (for two), and plural (for three or more).

(3) INFLECTIONAL NUMBER ON YUP'IK NOUNS George Charles, speaker

qayaq	'(one) kayak'	*paluqtaq*	'beaver'
qayak	'(two) kayaks'	*paluqtak*	'(two) beavers'
qayat	'(three or more) kayaks'	*paluqtat*	'(three or more) beavers'

All Yup'ik verbs contain a pronominal suffix referring to the core arguments of the clause. These, too, distinguish singular, dual, and plural participants.

(4) PRONOMINAL NUMBER ON YUP'IK VERBS — George Charles, speaker

ayagtuq	'he/she/it left'	*niitaa*	'he/she/it heard her/him/it'
ayagtuk	'they two left'	*niitak*	'he/she/it heard them two'
ayagtut	'they (three or more) left'	*niitai*	'he/she/it heard them all'
niitak	'they two heard her/him/it'	*niitaat*	'they all heard her/him/it'
niitagkek	'they two heard them two'	*nitaagket*	'they all heard them two'
niitakek	'they two heard them all'	*niitait*	'they all heard them all'

The pronominal suffixes appear on the verb even when a coreferent noun is present.

(5) COOCCURRENCE OF NOUNS AND PRONOMINAL SUFFIXES — George Charles, speaker

Paluqtak *ayagtuk.*
paluqtar-k *ayag-tu-k*
beaver-DUAL leave-INDICATIVE.INTRANSITIVE-3DUAL
'The two beavers left.'

Paluqtat *niitait.*
paluqtar-t *niite-a-it*
beaver-PLURAL hear-INDICATIVE.TRANSITIVE-3PLURAL/3PLURAL
'They heard the beavers (three or more).'

Demonstratives carry similar number suffixes, whether they are serving alone as nominals or they are associated with a noun: *tamakuk* 'those two', *tamakut* 'those (three or more)', *tamakuk paluqtak* 'those two beavers', *tamakut paluqtat* 'those beavers (three or more)'.

Yup'ik mass nouns such as *uquq* 'oil' and *meq* 'water' often appear with number suffixes to indicate units of a substance, such as 'containers of': *uqu-k* 'oil-DUAL' = 'two sealpokes of oil'; *mer'-et* 'water-PLURAL' = 'buckets of water'. Not all nouns have singular, dual, and plural forms. Some nouns are inherently dual because they involve pairs of parts, such as *qerrulliik* 'pants, trousers', *atasuak* 'summer pants', and *nuussicuak* 'scissors' (*nussir-cuar-k* 'scissor-little-DUAL' = 'little pair of knives'). When several pairs of pants or scissors are discussed, plural forms are used. Other nouns have only plural forms, such as *niicugnissuutet* 'radio' (*niicugni-ssuut-et* 'listen-device.for-PLURAL'), presumably because of the multitude of parts comprising the appliance.

3.2.2 *Inverse number*

Languages of the Kiowa-Tanoan family exhibit a fascinating system for specifying number, first described by Wonderly, Gibson, & Kirk in 1954 and by Merrifield in 1959 for Kiowa. All nouns fall into one of four classes, labeled I, II, III, and IV. The system is illustrated here with Jemez material from Sprott 1992.

Nouns in Class I refer mostly to animates, including all kinship terms, persons, members of ethnic groups, officials, animals, birds, and insects. Examples include *t'æ'æ* 'person', *vééla* 'man', *'ówa* 'woman', *kį* 'child', *'æ ki* 'boy', *tyó* 'girl', *hwü* 'governor', *tetááse* 'priest', *sądáálu* 'soldier', *wéhų* 'skeleton', *hwæ lá* 'bear', *'ą ąyú* 'lion', *yąą* 'coyote', *pąą* 'deer', *yæ lu* 'elk', *mųųsa* 'cat', *dúkų* 'mouse', *séy'u* 'bird', *séé* 'eagle', *kyáá* 'crow', *'ą ąmų* 'ant', *hwíiya* 'fly', *wádul'u* 'egg', and *ká* 'seed'.

Nouns in Classes II and III refer to inanimates. The semantic difference between II and III is not obvious. Both contain terms for body parts, but the noun *hǫ* 'leg' is in Class II, while *hǫ* 'bone' is in Class III. Class II nouns include *gűbæ* 'water jar', *táásæ* 'dish', *dáábæ* 'chair', *hhú* 'cedar', *káápæ* 'tent', *tyáha* 'lips', *hwúúy'a* 'weed', *kwį́ į́nį* 'wind', *há'á* 'car, wagon', *tyétubæ* 'box', *tyą́ ą́* 'cactus', *búúl'u* 'apple', *wátye* 'ear', *pį́ į́nį* 'thread', *gűl'æ* 'gate', *wááchi* 'rainbow', *máté* 'hand', *t'ú* 'head', *nǫ́ǫ́nį* 'cottonwood', *wæ hæ* 'cloud', *hwúse* 'nose', *tyákįnį* 'ladder', and *wáákwe* 'bridge'.

Class III nouns include *déédе* 'shirt', *kwǫ́ǫ́* 'tooth', *gį́tuu* 'stove', *pá* 'flower', *géésu* 'cheese', *kyá'á* 'stone', *mą́* 'finger', *p'æ æ* 'moon', *hæ æ* 'arm', *hwǫ́ǫ́* 'parched corn', *p'o'o* 'corn', *tyí* 'arrowhead', *zúbodæ* 'hail', *dá'á* 'land', and *wǫ́hǫ́* 'star'.

Class IV nouns designate masses: *tyæ hæ la* 'clay', *yáále* 'money', *zú* 'snow', *sų́'ų́* 'rain', *tyųųwesh* 'salt', *hú* 'clothes', *hų́* 'flour', *'ų́* 'blood', *tyį́ į́* 'grass', *gahwé* 'coffee', and *p'á* 'water'.

Loanwords are integrated into the classification, as can be seen in Class I *sądáálu* 'soldier', Class II *táásæ* 'dish', Class II *géésu* 'cheese', and Class IV *gahwé* 'coffee'.

There is only one number suffix *-sh*, but its meaning appears at first unsteady, sometimes marking plurals, sometimes duals, sometimes singulars. It actually marks nouns in the 'unexpected' or inverse number. Animates are generally conceived of as individuals, so the unmarked number for Class I nouns is singular, and *-sh* marks duals and plurals. Inanimates are less strongly individuated, so the unmarked number is plural. Class II nouns show *-sh* in the singular and dual, and Class III nouns in just the dual. Masses are not counted, so *-sh* never appears with Class IV nouns.

(6) JEMEZ NOUN CLASSES AND NUMBER — Sprott 1992: 53

	I	II	III	IV
SINGULAR	-	*-sh*	-	-
DUAL	*-sh*	*-sh*	*-sh*	-
PLURAL	*-sh*	-	-	-

Noun class in Kiowa-Tanoan languages is reflected in the pronominal prefixes on verbs as well. The verbal prefixes can aid in identifying the class of certain nouns. Some nouns never appear with the *-sh* suffix, such as terms for 'sun' and 'moon', not because they refer to uncountable masses, but because they are never mentioned in the dual. The pronominal prefixes on verbs that appear with them confirm that they are Class III nouns. Other nouns, such as 'parched corn', never appear with the *-sh* suffix because they are always referred to in the plural. Again, the pronominal prefixes on associated verbs confirm that they are Class III nouns. As can be seen from the table in (6), the noun suffix system leaves some ambiguity of number. Class I nouns show the same marking for duals and plurals, Class II nouns for singulars and duals, and Class III nouns for singulars and plurals. The ambiguities are resolved by the pronominal prefixes on verbs.

3.2.3 *Derivational and lexical number on nouns*

Although, as we have seen, some North American languages do show obligatory number marking on all nouns, it is much more common for only some nouns to have plural forms, and for these to be optional. When such forms exist, they are usually terms for persons and occasionally certain animals. The situation in Maricopa, a Yuman language of Arizona, is typical. Gordon describes it as follows:

> Noun roots like verb roots are unmarked for number. Unlike verbs however, most nouns do not have distinct plural forms. Even those nouns which have specifically plural forms do not have distinct dual forms. Like verbs, those nouns which do have overtly plural forms are often used in the unmarked forms for plural referents. (Thus the marking of plurality is not obligatory.) The nouns which have plural forms are all animate and most are human. (Gordon 1986:29)

The plural nouns she has documented are in (7).

(7) MARICOPA DERIVATIONAL PLURAL ON NOUNS — Gordon 1986: 29-30

mhay	'boy'	*mhaa*	'boys'
mshhay	'girl'	*mshhaa*	'girls'
humar	'child'	*humaar*	'children'
nchen	'older sibling'	*nchiin*	'older siblings'
hat	'dog'	*haat*	'dogs'
'iipaa	'man'	*'iipash*	'men'
akoy	'old woman'	*ashkoysh*	'old women'
nkwii	'uncle'	*ntkwish*	'uncles'
kwr'ak	'old man'	*kwrsh'aak*	'old men'
sny'ak	'woman'	*snych'aak*	'women'

In languages with such systems, number can usually be determined from the verb. In (8) the plural form of 'older sibling' was not used, though it exists. The fact that more than one brother was working was inferrable from the verb stem.

(8) MARICOPA NUMBER INFORMATION FROM THE VERB — Gordon 1986: 269

'nchensh	*'ayuum*	*uuiivk*
'-nchen-sh	*'ayuu-m*	*uuiiv-k*
1-older.sibling-SUBJECT	something-ASSOCIATIVE	work.PLURAL-REALIS

'My brothers were working.'

In many languages, especially those with limited plural marking, number is distinguished lexically, particularly for certain nouns. Thus in Central Pomo the noun for 'man' is *báya*, but *čá·č́* is used for 'men' (Frances Jack, speaker, p.c.).

3.2.4 *Verbal number*

We tend to expect number distinctions to be marked on nouns, pronouns, and demonstratives, because these words often designate concrete, countable entities. Many North American languages, however, show number distinctions within verbs. These are not simple concord markers, like the *-s* of English *sing-s*, nor are they pronouns like the pronominal suffixes on Yup'ik verbs. Rather, they quantify events or states (Mithun 1988a,b). Multiple eventhood may sometimes imply a plurality of participants, but it is not a simple copy of nominal number; it represents a distinction of its own.

Examples of nominal and verbal number can be seen in Koasati, a Muskogean language of Louisiana and Texas. Material cited here is drawn from Kimball 1991. Number is not usually distinguished on nouns in Koasati, but nouns referring to multiple human beings may optionally be marked with the suffix *-ha*.

(9) KOASATI OPTIONAL PLURALS ON HUMAN NOUNS — Kimball 1991: 447

athómma	'Indian'	*athómma-ha*	'Indians'
falancí	'Cajun'	*falanci-há*	'Cajuns'
ná:ni	'man'	*ná:ni-ha*	'men'
tayyí	'woman'	*tayyi-há*	'women'
á:ti	'person'	*á:ti-ha*	'people'
ilanawíhli	'hunter'	*ilanawíhli-ha*	'hunters'

Kimball notes that animal names can occur with the suffix *-ha* when they refer to people of the clan of the same name, such as *nitá* 'bear, bears, Bear Clan person', *nita-há* 'Bear Clan people'. The suffix also pluralizes members of other clans: *hapí*

'salt, Salt Clan person', *hapi-há* 'Salt Clan people'. The plural marker is also used with surnames to designate a family: *á:bi* 'Abbey', *á:bi-ha* 'the Abbey family'.

Special paucal forms for 'a few' exist for a set of nouns containing the diminutive suffix *-(o)si*. The paucal is typically used for a group of somewhere between two and six, usually children or kinsmen. These nouns also have 'multiple plural' forms, used for more than a few. They consist of the paucal form plus the plural suffix *-ha*.

(10) KOASATI PAUCALS AND MULTIPLE PLURALS ON NOUNS — Kimball 1991: 449

		PAUCAL	MULTIPLE PLURAL
a:pó:si	'paternal aunt'	*a:pós-ki*	*a:pós-ki-ha*
tá:tasi	'paternal uncle'	*tá:tas-ki*	*tá:tas-ki-ha*
ifonó:si	'man's sister'	*ifonós-ki*	*ifonós-ki-ha*
ippokkósi	'grandchild'	*ippokkós-ki*	*ippokkós-ki-ha*
icofó:si	'nephew'	*icofós-ki*	*icofós-ki-ha*

(Forms for 'boy' and 'girl' show a different ordering of the suffixes: *ná:nosi* 'boy', *ná:noski* 'a few boys', *ná:nihaski* 'a lot of boys'; *tayyosí* 'girl', *tayyoskí* 'a few girls', *tayyihaskí* 'a lot of girls'.) The diminutive is used with animal names to designate the young or children belonging to a clan: *nitá* 'bear, Bear Clan person', *nitasí* 'bear cub, Bear Clan child'. The paucal and multiple plural suffixes, which are used only for persons, can be attached to these forms to designate groups of children of the clan: *nitaskí* 'a few/a couple of Bear Clan children', *nitaskihá* 'many Bear Clan children'.

Verbal number in Koasati, as in other languages, enumerates events or states. Verbal plurality can become routinely associated with certain semantic implications, however: a plurality of other aspects of the situation. The plurality of intransitive verbs like 'run' or 'die', usually implies a plurality of runners or dead. The plurality of transitive verbs like 'pick up' or 'kill' usually implies a plurality of objects picked up or of persons killed. The implications usually, though not always, show absolutive patterning. (The single argument of intransitives and the patient of transitives are inferred to be plural.) Verbal plurality can also be used for a repetition of actions like hitting, or a recurrence of states like being ill, involving a single set of participants.

Verbal number may be indicated lexically, derivationally, or inflectionally. A large number of North American languages show lexical distinctions of number. Some verb roots contain number specification as part of their basic meanings. The Koasati verb *walí:na*, for example, is used for a single person or animal running alone, while the verb *tółkan* is used for a group running together. The two verbs denote what are categorized as different kinds of events. (A few English verbs also imply a plurality of participants, such as *stampede* or *scatter*, though the lexicon has not developed in the same systematic way.) The verbs that show such alternations tend to represent

situations in which the number of participants is viewed as significantly affecting the nature of the action or state, such as sitting or living, standing, lying, eating, talking, walking, running, coming, going, dying, killing, and various kinds of handling. Living alone is presented as significantly different from living in a group. Killing one may be murder, but killing a group would be a massacre, a different kind of event.

In Koasati, different verbs of position exist for situations involving one, two, and more persons. Other sets of verbs distinguish situations involving one or two participants versus those involving more. Still others distinguish events involving one from those involving two or more.

(11) KOASATI VERB ALTERNATION FOR NUMBER — Kimball 1991: 323

	SINGULAR	DUAL	PLURAL
'stand'	*haccá:lin*	*hikkí:lin*	*lokkó:lin*
'sit'	*cokkó:lin*	*cikkí:kan*	*í:san*
'dwell'	*á:tan*	*áswan*	*í:san*
'lie down'	*ballá:kan*	*balláskan*	*bálkan*

	SINGULAR/DUAL	PLURAL
'die'	*íllin*	*hápkan*
'go about'	*á:yan*	*yomáhlin*
'go'	*alí:yan*	*amá:kan*
'come'	*óntin*	*ilmá:kan*

	SINGULAR	DUAL/PLURAL
'run'	*walí:kan*	*tółkan*
'clamber up'	*onohalí:kan*	*onokáhkan*
'be lost'	*nakáłłan*	*wasátkan*
'pick one/more up'	*í:sin*	*píhlin*
'put one/more in'	*hókfin*	*áłłin*
'release one/more'	*acapílkan*	*askáhlin*
'make noise once/more'	*naksáhkah*	*sakáplin*
'hit once/more'	*batáplin*	*bóklin*

The verbs are not simple paradigmatically alternating forms. Different verbs are used for one sitting (*cokkó:lin*) and one dwelling (*á:tan*), but the same verb is used for a group sitting or dwelling (*í:san*). These roots may participate in further derivation. The verb *á:t* 'one dwells' is nominalized to *alí:ta* 'life history'; the verb *ásw* 'two dwell' is nominalized to *alíswa* 'dwelling place of two people'; the verb *í:s* 'three or more dwell' is nominalized to *istilká* 'place of many dwelling or existing'.

Examples of verb alternation are in (12). There is no number marking on the noun 'whale(s)'. The number of whales is inferred from the number of goings about.

(12) LEXICAL VERB PLURALITY IN KOASATI — Kimball 1991: 446

a. *okipófkak* *o:wá:y*
okipófka-k *o:w-á:y*
whale-SUBJECT in.water-go.about.SINGULAR/DUAL
'A whale is swimming about.'

b. *okipófkak* *o:wa:yá:c*
okipófka-k *o:w-a:yá-ic*
whale-SUBJECT in.water-go.about.SINGULAR/DUAL-3NON.SINGULAR
'Two whales are swimming about.'

c. *okipófkak* *o:yomáhl*
okipófka-k *o:-yomáhl*
whale-SUBJECT in.water-go.about.PLURAL
'There are some whales swimming about.'

There are just two verb roots for 'go about', *á:yan* for one or two goings about and *yomáhlin* for more. The ambiguity of the first is resolved by the addition of a derivational suffix *-ci* indicating two or more. The combination of *á:yan* 'one or two goings about' with *-ci* 'two or more' can only mean 'two goings about'.

Plurality of a transitive verb can imply a plurality of affected patients. If there are multiple burnings, there are likely to be multiple items burned.

(13) LEXICAL NUMBER IN KOASATI VERBS — Kimball 1991: 447

ittón *atiní:lilit*
ittó-n *atiní:li-li-t*
wood-OBJECT burn.SINGULAR-1SINGULAR.AGENT-PAST
'I burned a log.'

itton *atínnilit*
ittó-n *atínni-li-t*
wood-OBJECT burn-PLURAL-1SINGULAR.AGENT-PAST
'I burned some logs.'

Verbal number is also signaled in Koasati by several derivational processes. The suffix *-ci* seen in (12)b above also indicates repeated or extended action.

(14) DERIVATIONAL NUMBER IN KOASATI VERBS — Kimball 1991: 329

póckan	'squirt'	*poclí:cin*	'squirt again and again'
haccá:lin	'(one) stand'	*hac:ká:cin*	'(one) stand agitatedly'
páłłin	'split something'	*pałli:cin*	'splinter something'
molápkan	'gleam'	*molapli:cin*	'glitter'
páthan	'be wide'	*apathá:cin*	'overspread, as a flood'

Another set of derivational processes involves verbs with suffixes indicating manner or medium, such as *-p-* 'action with the foot, hand, or other organ', *-y-* 'with circular motion', *-s-* 'involving liquid', *-ł-* 'severing', *-t-* 'with motion from stationary position', *-:* 'without motion from stationary position', and *-f-* 'on a surface'.

(15) DERIVATIONAL NUMBER IN KOASATI VERBS — Kimball 1991: 314-21

	SINGULAR	PLURAL
'chip lengthwise'	*lofá-p-lin*	*loffí:cin*
'wrap one/more up'	*aponá-y-lin*	*aponní:cin*
'one/more sink'	*okhabó-s-kan*	*okhabó:kan*
'snap one/more'	*kawá-ł-łin*	*káwwin*
'one/more melt'	*łató-f-kan*	*łató:kan*

There is a pluralizer infix *-s-*.

(16) DERIVATIONAL NUMBER IN KOASATI VERBS — Kimball 1991: 327

	SINGULAR	PLURAL
'be hungry'	*aká:non*	*akásnon*
'knock one/more over'	*akopi:lin*	*akopíslin*

A reduplicative process also pluralizes verbs, deriving terms for actions occurring in repeated, discrete segments, or states that recur.

(17) REDUPLICATIVE PLURALIZATION IN KOASATI VERBS — Kimball 1991: 325-7

	SINGULAR	PLURAL
'be full'	*aló:tkan*	*alotló:kan*
'be narrow'	*lapátkin*	*lapatló:kin*

imałík *tonohtó:kit*
im-ałí-k *tonoh-tó:-kit*
3POSSESSIVE-berry-SUBJECT be.round-REDUPLICATION-CONNECTOR
'Its berries are round, and . . .'

3.2.5 *Distributives*

The functions of the verbal plurals of Koasati verge on those of a related category. Distributives, sometimes mistaken for plurals, are pervasive in North America. They can occur on nouns, numerals, adjectives and even adverbs, but they appear most commonly on verbs.

Distributive markers on nouns can have two kinds of functions. They may indicate that the objects referred to are distributed over space, as in the examples in (18) from Quileute, a Chemakuan language of northwest Washington State.

(18) QUILEUTE DISTRIBUTION OF ENTITIES OVER SPACE — Andrade 1933: 187

tukô·yo'	'snow'	*tuƚkô·yo'*	'snow here and there'
t'súwi·tcił	'a boil'	*t'suwe·wítcił*	'boils here and there'

Distributives on nouns may also distribute entities over types, indicating that a set of objects consists of assorted kinds. This use can be seen in the nouns below from Mohawk. Neuter nouns in Mohawk do not carry number distinctions. Thus the noun *onén:ia'* is used to mean both 'rock' and 'rocks', and the noun *otsikhè:ta'* is used for 'sugar', 'candy', and 'candies'. The distributive form *onenia'-shòn:'a* 'various rocks' can only mean rocks of assorted types, usually different shapes, sizes, and colors. The distributive *otsikhe'ta'-shòn:'a* 'various candies' refers to an assortment of different kinds of candy, such as one might find in a candy store. The nominal *ierakewáhtha'* is derived from a verb, literally 'one wipes with it'. The distributive form *ierakewahtha'-shòn:'a* was used for the assortment of paper products along one aisle of a grocery store, including paper towels, paper napkins, tissues, etc. It could not be used for a row of paper towels alone.

(19) MOHAWK DISTRIBUTION OF ENTITIES OVER TYPES — Kaia'titahkhe' Jacobs, speaker

onén:ia'	'rock(s)'	*onenia'shòn:'a*	'various rocks'
otsikhè:ta'	'sugar, candy, candies'	*otsikhe'ta'shòn:'a*	'various candies'
ierakewáhtha'	'towel'	*ierakewahtha'shòn:'a*	'paper products'

Distributives may also occur on numerals, as in the Navajo example below, where the sets of three are distributed over the children.

(20) NAVAJO DISTRIBUTIVE NUMERALS — Young & Morgan 1980: 32

Dibé	*yázhí*	*daa-táa'-go*	*sha'áłchíní*	*bitaasénii'*
sheep	its.offspring	DISTRIBUTIVE-three-SUB	my.children	I.gave.them

'I gave out three lambs each to my children.'

Distributives may occur on adjectives, distributing a quality over each entity described individually. As seen in (18), distributives in Quileute are formed by reduplication, a common pattern cross-linguistically. Commenting on the sentence in (21), Andrade notes that *'ha't'c-* "pretty" is reduplicated, presumably because the quality of beauty was distributed (each one was pretty in her own way)' (1933: 191).

(21) QUILEUTE DISTRIBUTION OF QUALITIES — Andrade 1933: 191

tcík^{u}	*ká·yad*	*ławé·-łk'wa-'as*	*ha-hé't'c.*
big	shark	two-child-he	DISTRIBUTIVE-pretty

'Big Shark had two daughters who were pretty.'

Distributives may occur on possessives as well, indicating that the possessions are distributed over individual possessors, rather than owned collectively by a group. Nisgha, a Tsimshianic language of British Columbia, contains a distributive prefix *qa-*. In (22) it indicates that the hearts and feet belong to each person individually.

(22) NISGHA DISTRIBUTIVE POSSESSION — Tarpent 1987: 550

qó:t	'heart'	*qa-qó:t-m̓*	'our hearts'
ʔasisáy̓	'feet/legs'	*qa-ʔasisá-ti:t*	'their feet/legs'

Most common cross-linguistically are distributive markers on verbs. Verbal distributives generally spread an event or state over various locations, participants, or occasions. Distribution over space can be seen in the Mohawk distributives below.

(23) MOHAWK VERBAL DISTRIBUTIVES — Konwatsi'tsaienni Phillips, speaker

Tewanine'kara'wánion's
te-w-anine'kara'wa-nion'-s
DUALIC-NEUTER.AGENT-lightning.strike-DISTRIBUTIVE-IMPRF
'Lightning was striking all over.'

Seksahrónnion'
s-ks-hr-onnion'
2AGENT-dish-set.on-DISTRIBUTIVE
'Set the table!' ('Set the dishes around here and there')

The distribution of an action over various locations can imply its distribution over different persons. The verbs in (24) state literally that the serving and visiting were distributed over multiple locations, but they imply the presence of multiple diners in (24)a and multiple hosts in (24)b.

(24) MOHAWK VERBAL DISTRIBUTIVES — Warisose Kaierithon, speaker

Wa'enontarónnion'
wa'-e-nontar-a-r-onnion'
FACTUAL-FEMININE.AGENT-soup-EPENTHETIC-put.in-DISTRIBUTIVE
'She kept serving the soup (one ladleful at a time to each diner).'

Wa'kenatahrónnion'
wa'-k-nata-hr-onnion'
FACTUAL-1SG.AGENT-visit-ANDATIVE-DISTRIBUTIVE.PRF
'I went visiting here and there.'

The distribution of action over different participants can also imply a certain individuality on the part of these participants. The Mohawk verb in (25) was used for a purchase accomplished in a single trip to a single shop. The buying was distributed over an assortment of groceries in a shopping cart. This verb would not be used for the purchase of a single carton of eggs.

(25) MOHAWK DISTRIBUTION OVER ASSORTED OBJECTS — Kaia'titahkhe' Jacobs, speaker

Wa'khninónnion'
wa'-k-hninon-nion'
FACTUAL-1SG.AGENT-buy-DISTRIBUTIVE.PRF
'I bought some things.'

Distributive verbs, particularly intransitives, may also distribute actions over multiple agents, each acting independently, or over multiple occurrences. All of these functions can be seen in the reduplicated distributive verbs below from Coeur d'Alene, a Salishan language of Idaho.

(26) COEUR D'ALENE VERBAL DISTRIBUTIVES — Reichard 1938: 635

rá´w-raw-p	'it dropped here and there'	(*räw* 'drop')
q̓ä´t̓-q̓ɛt̓-p	'they each climbed'	(*q̓ät̓* 'go up')
a´t̓s-ɛtsqä'ª	'they went out one by one'	
i´t̓-ɛtc	'each one slept, they slept repeatedly'	

In a number of instances, distributives have evolved into plural markers. Distributives usually imply plurality: one cannot easily distribute a single object or act over different types or over various locations. At a certain point the implied plurality is reanalyzed as the central meaning of the form. The process often begins with terms for human beings. Persons are typically conceived of as inherently individuated. In a language in which nominal distributives signal a distribution over different types ('various and assorted'), terms for human beings often carry distributive markers nearly every time more than one is mentioned. Perhaps especially under the influence of European languages with inflectional plural markers, the regularly occurring distributive markers have come to be interpreted as a direct signal of plurality. Boas remarked on such a shift in the use of Kwakwala distributives.

> It seems that this form is gradually assuming a purely plural significance. In many cases in which it is thus applied in my texts, the older generation criticises its use as inaccurate. Only in the case of human beings is reduplication applied both as a plural and a distributive. (Boas 1911b: 444)

Andrade observed a similar development in Quileute.

> At the present time, perhaps under the influence of English, the younger Quileute reduplicate their words to express plurality, without any connotation of distribution. Due to the nature of the occasion, it is difficult to determine in some instances whether distribution or plurality is denoted; but in by far the majority of the reduplicated nouns in the texts dictated by Séixtis [an older speaker], distribution is clearly expressed, and in numerous occasions in which plurality was implied in the sentence, the nouns were not reduplicated. (Andrade 1933: 190)

Similar shifts have been reported for Chinook by Boas (1911c: 608), for Southern Paiute by Sapir (1930: 257), for Nisgha by Tarpent (1987: 550), for Mohawk by Mithun & Corbett (1995), and for Jicarilla Apache by Dagmar Jung (p.c. 1995).

3.2.6 *Collectives*

Closely related in function to distributives are collectives. Both specify a way of viewing members of a group. While distributives focus on their separateness, collectives emphasize their solidarity. As with plurals and distributives, the meanings of collectives vary with the area of grammar in which they are expressed.

A collective suffix *-ʔsin-* can be seen in Blackfoot, an Algonquian language of Montana and Alberta. (The suffix *-ʔa* is a form of the singular specific marker.)

(27) BLACKFOOT COLLECTIVES ON NOUNS — Taylor 1969: 181

otáákii-ʔsin-ʔa	'womenfolk'	*otsúni-ʔsin-ʔa*	'herd of buffalo'
otsínnoka-ʔsin-ʔa	'herd of elk'	*otómitta-ʔsin-ʔa*	'pack of dogs'

Collectives may cooccur with number markers. The Yana collective *-wi* occurs in singular nouns (*'i-* 'tree, stick', *ʔi-wi* 'firewood'), with dual *-u:* (*mal'g-u* 'ear', *mal'g-u:-wi* 'two ears'), and plural *-t'-* (*si:win'i* 'yellow pine', *si-t'-in'i-wi* 'y. pines') (Sapir 1917).

Zuni contains a more elaborate set of nominal collective suffixes which specify the spatial configuration of the elements in the set. They include *-ła* 'objects in a shallow container', *-łpo* 'objects in an arrangement (stack, bundle)', *-pa* 'objects in a deep container', and *-pała* 'objects in a wrapped bundle'. A single set of objects is treated grammatically as singular, as can be seen from the singular suffixes *-ʔe*, *-n*, and *-nne* on 'ashes in an ashtray', 'skeleton' ('bundle of bones'), 'bridle bit' ('metal in an arrangement'), and 'papers in a drawer'. Collective nouns with plural suffixes designate multiple sets, as in 'truckloads of melons' ('spherical objects in deep containers') and 'very skinny people' ('bones wrapped in bundles').

(28) ZUNI COLLECTIVE SUFFIXES ON NOUNS — Newman 1965: 58-9

lu	'ash'	*lu-ɬ-ʔe*	'ashes in an ashtray'
sa	'bone'	*sa-łpo-n*	'skeleton'
he	'metal'	*ha-łpo-nne*	'bridle bit'
cʔina	'paper, letter'	*cʔina-p-ʔe*	'papers in a drawer'
mo	'spherical object'	*mo-pa-·we?*	'truckloads of melons'
sa	'bone'	*sa-pała-·we?*	'very skinny people'

Collective affixes may appear in verbs as well. Sets of events viewed collectively are typically contiguous in space and time, often implying the spatial proximity of their participants. The participants are typically treated as a unit as well, often with the implication that agents cooperate in concerted action, or that patients are affected or manipulated together as a set. Examples of verbal collectives can be seen in Sahaptin, a Sahaptian language of Washington and Oregon.

(29) SAHAPTIN VERBAL COLLECTIVES — Jacobs 1931: 151,160

pawəcwáutkʷna	'a bunch of people camped there'	(*-wautkʷ-* 'camp')
ixápcawiya	'a bunch fell down accidentally'	(*-wi-* 'fall')
ipcánpa	'he took a bunch, a handful'	(*-np-* 'take')
ipcáwe·haika	'he threw down a bunch'	(*we·hai-* 'move down')

Both distributives and collectives presuppose multiplicity, in that they both specify ways of viewing members of a group. With distributives, the members are presented as distinct individuals, separated in space, type, or time. With collectives, they are presented as elements of a cohesive unit. Distributives and collectives are not perfect opposites, however. Most distributives imply that the group has at least three members. (Exceptions are numeral and quality terms, that can distribute sets or qualities over two parties.) The Mohawk distributive noun *otsikhe'ta'shòn:'a* 'various candies', for example, would not be used to refer to one candy cane and one lollipop.

The distributive verb *wa'khninónnion'* 'I bought various things' would not be used to describe the purchase of one apple and one sausage. In a similar way, an English speaker would not use the verb 'scatter' for two objects. Collectives, by contrast, very often apply to just two entities. Yana even contains a special dual collective.

(30) YANA DUAL COLLECTIVE — Sapir & Swadesh 1960: 41

su-ʔyud-saʔas	'they both (only two) went off'
be-ʔyud-kiʔa	'that belongs to two'
yu-ʔyud-ʔaskiʔnigi	'they made fire together'

In fact collective markers often descend diachronically from duals. The shift can be seen in progress in Washo, of Nevada and California. Jacobsen reports that the Washo dual prefix *bu(ʔ)-* is taking on a collective function:

> The meaning imparted by these prefixes is that of a pair of persons doing an action together, usually an action that requires a certain amount of cooperation or interaction, such as gambling, talking, or fighting . . . In the case of some verbs expressing strong interaction, such as *gum bugéwe* 'to gamble', the idea of 'togetherness' seems to take precedence over the idea of duality, so that forms for the verb may refer to actions of a group of more than two persons. (Jacobsen 1964: 538)

(31) WASHO DUALS AS COLLECTIVES — Jacobsen 1964: 538-9

bum-buʔ-émlu	'to eat together'
gum-buʔ-išgépísgišuwaʔa?	'they (dual) packed up and went off together'
gum-buʔ-áŋaliʔšémuyetiʔa?	'they (dual) made a permanent home together'

Collective markers also often develop from reciprocals. Reciprocal actions package two or more events as one, events that involve close interaction between participants at a single place and time. If we see each other, I see you and you see me, at the same place and time. Bella Coola or Nuxalk, a Salish language of the British Columbia coast, contains a reciprocal suffix *-maxʷ*. The same suffix is pressed into service as a collective.

(32) BELLA COOLA RECIPROCAL > COLLECTIVE — Nater 1984: 66

satixmt-maxʷ	'to be each other's pals'
ʔiƛyukt-maxʷ	'to have an argument with each other'
ʔaxca-maxʷ	'to lie down together'
stamʔapsułmt-maxʷ-aw	'they are co-residents, live together'
ʔałpst-maxʷ	'to eat together'

3.2.7 *Associatives*

A final set of markers closely related to plurals are associatives. They are typically added to nominals to designate a group consisting of the person or object referred to by the nominal alone plus his/her/its associates. Central Pomo, a Pomoan language of northern California, contains an associative enclitic *=ṯoya*.

(33) CENTRAL POMO ASSOCIATIVE — Frances Jack, speaker

a. *Norman Ball=ṯoya*	*lówač̌ya*	*ʔe*	*mu·l*
Norman Ball=ṯoya	*lów-ač̌=ya*	*ʔe*	*mu·l*
Norman Ball=ASSOCIATIVE	talk.PL-IMPRF.PL=PERS.EXPER	COPULA	that

'Norman Ball and them were talking about that.'

b. *Bá·=ṯoya=wa*	*mída*	*napʰów?*
bá·=ṯoya=wa	*mída*	*napʰó-w*
who=ASSOCIATIVE=Q	there	sit.PL-PRF

'Who all is living there now?'

Associatives are not simple number markers. Central Alaskan Yup'ik also contains an associative marker, but it cooccurs with dual and plural number suffixes.

(34) CENTRAL ALASKAN YUP'IK ASSOCIATIVE — George Charles, speaker

a. *Cunankuk*	*ayagtuk*
cuna-nku-k	*ayag-tu-k*
Cuna-ASSOCIATIVE-DUAL	leave-INDICATIVE-3DUAL

'Cuna and his friend left.'

b. *Cunankut*	*ayagtut*
cuna-nku-t	*ayag-tu-t*
Cuna-ASSOCIATIVE-PLURAL	leave-INDICATIVE-3PLURAL

'Cuna and his friends/family left.'

Associatives, too, can show interesting developments over time. Sapir describes a suffix in Takelma, a language of southwestern Oregon, that is evolving from an associative marker into a dual.

(35) TAKELMA ASSOCIATIVE > DUAL — Sapir 1922: 249

sgísi-dì:l 'two coyotes'	(literally 'coyote and another')
wąxa-dì:l 'two brothers'	(literally 'his younger brother and another')
go:ʷm-dì:l 'we two'	(from *go:ʷm* 'we')

3.3 Gender

The category of gender represents a grammatical classification usually, though not always, based on physical features of sex and/or animacy. It may be marked on pronouns, nominal affixes, articles, demonstratives, adjectives, and even verbs. Grammatical gender is somewhat rarer in North America than in some other parts of the world; many of the languages show no grammatical gender at all, such as those of the Chumash and Eskimo-Aleut families. In a number of families only some languages exhibit grammatical gender distinctions, and many of these can be seen to have developed relatively recently. (Speech styles reflective of sex and social role are discussed in section 5.2.)

Six of the seven Pomoan languages of northern California show a gender distinction, but only on independent pronouns. The languages contain one set of pronouns for masculine singulars 'he', 'him', 'his', used for male human beings (or personified animals), and another for feminine singulars 'she', 'her', 'hers', used for female human beings. The general third person pronouns in Central Pomo are cognate with masculines in the other languages, identical in form to the demonstrative *mu·l* 'that'. (Participants whose identity is clear from context are not reidentified in every clause.)

Languages of the Coast branch of the Salishan family, spoken in western Oregon, Washington, and British Columbia, show a gender distinction in demonstratives, which may also serve as the bases of articles and pronouns. In general, singular female persons are distinguished from all other entities. The markers form complex systems, also specifying definiteness, number, relative proximity and visibility. They tend to be pervasive in natural speech. Nouns are usually preceded by an article, even if a demonstrative is present as well, as in the Upper Chehalis examples in (1).

(1) UPPER CHEHALIS DEMONSTRATIVES — Kinkade 1963: 131

a. *tecχcá*	*tec*	*słá·nay?*
that.DISTAL.FEMININE	DEFINITE.FEMININE	girl

'that girl'

b. *tetχté*	*tet*	*qáχa?*
this.PROXIMAL.NON.FEMININE	DEFINITE.NON.FEMININE	dog

'this dog'

In Upper Chehalis, only nouns referring to some female persons are grammatically feminine, including 'mother', 'grandmother', 'daughter', 'granddaughter' (the same noun as 'grandson'), 'younger sister', 'girl', and nouns with the lexical suffix *-ɬn?* 'woman', as in *c pásten-ɬn?* 'an American woman' (Kinkade 1963: 130-3). Hess

describes a similar system in Lushootseed, noting that 'occasionally speakers use the marked [feminine] form with small animals thereby imparting a notion similar to the English *cute* or *cuddly*. Sometimes, too, the marked form is used with a favourite object, e.g. a canoe, for which the owner feels some sentimental attachment' (1992: 100).

A strikingly similar gender system appears in a neighboring non-Salishan language. In Quileute, a Chimakuan language spoken on the northwest coast of Washington, demonstratives and third person pronouns (both independent forms and pronominal suffixes) distinguish feminine from non-feminine gender, as well as definiteness, visibility and proximity to the speaker and hearer (Andrade 1933: 103-6, 246-51). Feminine forms are used for female persons and large animals. Male forms are used for all other entities, including male persons and large animals, all other animals, inanimate objects, and abstractions, including ideas expressed by clauses.

Languages of the Chinookan family, along the Columbia River between Washington and Oregon, show gender distinctions that are further integrated into the grammar and lexicon. (Silverstein 1977 points to the possible areal significance of Coast Salishan neighbors to both the north and the south.) Gender is specified in the Chinookan languages by prefixes on nouns, prefixes on independent pronouns/demonstratives, and pronominal prefixes on verbs. Masculine, feminine, and indefinite genders are distinguished. A semantic basis for the categories can be seen by comparing the forms in (2).

(2) Gender on Kathlamet Chinook nouns — Hymes 1955: 90-131

Masculine *i-*		Feminine *a-*	
iq?iúqt	'old man'	*aq?iúqt*	'old woman'
iqsxíłau	'monster'	*aqsxíłau*	'female monster'
ixkáqunq	'elder one (male)'	*axkáquna*	'elder one (female)'
íxkásqax	'younger one (male)'	*axkásqax*	'younger one (female)'
íkala	'man'	*aqakílak*	'woman'
íqsix̣	'son-in-law'	*ák?is*	'grandmother'
ikak?mána	'chief'	*aqłápƀix̣*	'girl'
iíalx̣t	'his elder brother'	*ákalx̣t*	'her elder sister'
ik?utk?ut	'dog (male)'	*ak?útk?ut*	'dog (female)'
Neuter/indefinite *ł-*			
łq?iuqt	'an old person'	*-łqsxíłau*	'a monster'
łkuałílx̣	'person'	*łk?útk?ut*	'dog'

The semantic basis for the gender classification of many other nouns is less clear.

(3) Gender on Kathlamet Chinook nouns — Hymes 1955: 90-131

Masculine		Feminine	
ipúkua	'lynx'	*aqaƀíla*	'crab'
icixq	'mountain goat'	*ac?mínqan*	'snail'
ikípix̣ł	'sealion'	*aqískuax*	'seal'
ip?ísxas	'skunk'	*ap?ísxas*	'badger'
ilatát	'raccoon'	*aq?iuíqi*	'knife'
ik?uali	'whale'	*aíi*	'mud clam'
ilałqi	'digging stick'	*ákmuks*	'blackberries'
icúłq	'harpoon'	*akipút*	'salmon roe in skins'
ikánim	'canoe'	*aknuaks*	'heart'
isíqi	'door, doorway'	*ak?lácin*	'heads (of salmon)'
iauík	'day after tomorrow'	*ápul*	'night'
iix̣atk	'road, trail'	*ápak*	'a reed'
iłáuick	'flood tide'	*átuł*	'fire'
Neuter/indefinite			
łcúqua	'water'	*łxuímax*	'island'
łuxulímat	'Wasco language'	*łlípax*	'hunting line'
łcáuni	'a logjam'	*łkíłuł*	'pounded dry salmon'
łpait	'line, rope'	*łkuáłi*	'poorness'
łtka	'snow'	*łkcáma*	'a comb'
łqáuulqt	'blood'	*łqapt*	'salmon roe'

Boas (1911: 598-9, 603) did note certain regularities in Chinookan gender assignment. Large animals tend to be masculine and smaller ones feminine, though a number are problematic (masculine 'mussel' versus feminine 'killer whale'). Qualities tend to be masculine ('smallness', 'sickness', 'cold'). Plants and implements used with plants are feminine. Many indefinite gender nouns have a mass or collective sense: *ł-únu* 'urine', *ł-tka* 'snow', *ł-qácau* 'deerfat', *ł-cáuni* 'logjam'. Contrasts can be noted, for example, between the masculine *i-mał* 'body of water, river, bay' and the indefinite *ł-cuqua* 'water'; and between the feminine *a-k?ílak* 'dry salmon' and the indefinite *ł-kíłuł* 'pounded dry salmon'. It is noteworthy that the prefix *ł-* is also one of the plural markers: *i-k?uáiatk* 'hole, cache', *ł-k?uaiátk-max̣* 'caches' (*-max* is a distributive). The prefix may have originated as a collective, then evolved in some uses to a plural. Hymes (1985a) concludes that the gender contrasts are lexicalized but the existence of meaningful pairs, such as *i-ya-xan* 'his son' and *a-ya-xan* 'his daughter', or *i-ya-duiha* 'his steer' and *a-ya-duiha* 'his cow', has provided a basis for exploitation of the distinction for expressive purposes. He points to a

contrast in Wishram Chinook forms used by Louis Simpson (Sapir 1909). The feminine prefix *a-* seems to have developed a secondary sense of containment, in line with its presence on terms for baskets, dipper, and bucket. The term for 'canoe' usually appears as the masculine *i-knim*, but on some occasions when it functions primarily as a container, it shows the prefix *a-*. In one text, for example, a man comes up out of the water to his canoe (*i-knim*) and lays his sturgeon in it (*a-knim*).

Demonstratives, nouns, and pronominal prefixes on verbs usually show concord with the noun.

(4) KATHLAMET CONCORD — Hymes 1955: 304

qust	*i-kipix̣ɬ*	*i-axi-ax*	*ik-i-x-lucx-am*
behold	MASC-sealion	MASC-that-EMPHASIS	MASC.ERG-MASC.ABS-RFL-see-PURPOSIVE

'Behold, a sealion came to see the dance.'

In Simpson's Wishram texts mentioned above, the pronominal prefix referring to the canoe alternates between *i-* and *a-*, matching the prefix on the noun in that clause.

(5) WISHRAM CONCORD — Sapir 1909: 76 cited in Hymes 1985: 465

a-knim	*qušt*	*ɬ-á-g-laitix*
FEMININE-canoe	indeed	they-it.FEMININE-are.seated.in

Probably the best-known gender system in North America is that found in the Algonquian languages, which stretch from Alberta and Montana in the West eastward to the Atlantic, and from Labrador in the Northeast southward into North Carolina. All nouns in these languages are classified as either animate or inanimate. Nouns denoting biologically animate beings are grammatically animate. Some nouns for inanimate objects are grammatically animate, and some are grammatically inanimate. The gender classification of inanimate objects is not fully predictable, but certain patterns can be discerned. Nouns for entities that move, including not only persons and animals but also spirits and heavenly bodies, are grammatically animate. Those for trees and most metal tools are also animate. Nouns for most fruits, tubers, and root vegetables are animate, while those for most berries, nuts, and vegetables growing above the ground are inanimate. The tendencies are clear, but gender is not fully predictable on either semantic or formal grounds. The noun for 'strawberry' is inanimate, but that for 'raspberry' is animate; Blackfoot *miitis-* is animate when used for 'tree', but inanimate when used for 'stick'.

Gender is reflected in several areas of the grammar. In Blackfoot the singular suffix for animate nouns is *-wa* (*-a* after a consonant), and the plural is *-iksi*. The singular for inanimates is *-yi* (*-i* after a consonant), and the plural is *-istsi*.

(6) BLACKFOOT ANIMATE AND INANIMATE PLURAL NOUNS — Frantz 1991: 8-9

ANIMATE				
nínaa-wa	'man'	*nína-iksi*	'men'	
ponoká-wa	'elk'	*ponoká-iksi*	'elk'	(PL)
natáyo-wa	'lynx'	*natáyo-iksi*	'lynx'	(PL)
póós-a	'cat'	*póós-iksi*	'cats'	
káksaakin-a	'axe'	*káksaakin-iksi*	'axes'	
íssk-a	'pail'	*íssk-iksi*	'pails'	
INANIMATE				
ómahksíkimi-yi	'lake'	*ómahksíkimi-istsi*	'lakes'	
í'ksisako-yi	'meat'	*í'ksisako-istsi*	'meats'	
aohkíí-yi	'water'	*aohkí-istsi*	'waters'	
owáa-yi	'egg'	*owá-stsi*	'eggs'	
nítp-i	'leaf'	*nítp-istsi*	'leaves'	
mo'tokáán-i	'head'	*mo'tokáán-istsi*	'heads'	

Grammatical gender is also reflected in demonstratives both alone and accompanied by nouns. They generally carry the same suffixes as the nouns.

(7) GENDER ON BLACKFOOT DEMONSTRATIVES — Frantz 1991: 39

om-wa	'that one (AN)'	*om-iksi*	'those (AN)'
om-i	'that one (INAN)'	*om-istsi*	'those (INAN)'

amo-yi	*nááp ioyis-i*	*amo-istsi*	*nááp ioyi-istsi*
this-INAN	house-INAN	this-INAN.PL	house-INAN.PL
'this house'		'these houses'	

Grammatical gender is reflected in verbs as well. Verb stems are of four types. Animate intransitives (AI) have just one core argument (major participant), which is grammatically animate. Inanimate intransitives (II) have just one core argument, which is grammatically inanimate.

(8) BLACKFOOT INTRANSITIVES — Frantz 1991: 38

ANIMATE INTRANSITIVE (AI)	*soká'pssiwa*	'he/she/it (ANIMATE) is good'
INANIMATE INTRANSITIVE (II)	*soká'piiwa*	'it (INANIMATE) is good'

Transitive verbs have two core arguments. Transitive animates (TA) have an animate patient (object). Transitivé inanimates (TI) have an inanimate patient.

(9) BLACKFOOT TRANSITIVES — Taylor 1969: 262

TRANSITIVE ANIMATE (TA)	*kóónoosa*	'(you) find him/her/it (ANIMATE)!'
TRANSITIVE INANIMATE (TI)	*kóónika*	'(you) find it (INANIMATE)!'

The gender distinction is carried along through the full clause.

(10) BLACKFOOT SENTENCE — Frantz 1991: 63

Amostsi	*mŭnistsi*	*iikááhsiiyaawa*
amo-istsi	*mŭn-istsi*	*iik-aahsii-yi-aawa*
this-INANIMATE.PL	berry-INANIMATE.PL	very-good-INANIMATE.PL-3.PL

'These berries are good.'

Another major family in the East, Iroquoian, also shows grammatical gender, but the categories distinguished do not match those of the Algonquian languages, nor are they the same throughout the family. In the Southern branch of the family, which consists solely of Cherokee, gender is little developed, with one general third person category. A few transitive pronominal prefixes on verbs distinguish animate and inanimate third person patients: *tsi:yv:ʔniha* 'I am hitting him' versus *kv:ʔniha* 'I am hitting (it)'. There is also a third person indefinite agent 'one, someone': *v:kwv:hniha* 'someone is hitting me' versus *a:kwv:hniha* 's/he is hitting me' (Cook 1979: 41). The Northern Iroquoian languages, on the other hand, have developed robust gender distinctions, contrasting masculines, feminines, and neuters. The masculine has no cognate in Cherokee, the feminine is descended from the original indefinite, and the neuter is cognate with the Cherokee general third person (Chafe 1977).

In all of the Northern languages the masculine is used for all male persons and personified male animals. The original indefinite is still used for persons of unspecified sex ('one, someone, people in general') and, in Tuscarora, Seneca, and Cayuga, for all female persons as well. The neuter is used in all of the languages for animals and inanimate objects, and in Huron also for female persons. Interesting patterns of usage have developed in the eastern languages Onondaga, Oneida, and Mohawk, where both the feminine-indefinite and neuter-zoic categories are used to refer to women. Abbott 1984 provides a good description of the Oneida patterns, which generally characterize Mohawk and Onondaga as well. Speakers differ in their choice of reference to specific individuals, but once they have made a choice, they tend not to vary. An important criterion is the nature of the person: women who are small, graceful, delicate, and well-mannered tend to be referred to with the feminine-indefinite gender. Those who are large, awkward, aggressive, and loud tend to be referred to with the neuter-zoic gender. Age seems to be a factor, but with different effects for different speakers and perhaps languages. The feminine-indefinite form

is generally seen as one of respect, so it tends to be used for older women and is always used for older female relatives. Abbott reports that some older male Oneida speakers in Wisconsin maintain that the neuter-zoic form is used only for women past adolescence. Empathy is also a factor, but its effect is complex. Outsiders are generally referred to as neuter-zoic. In analyzing their own usage, Mohawk speakers were surprised to discover that they also use the neuter-zoic for some of their closest friends, those with whom they feel the strongest bonds. One was stunned to realize that she uses the feminine-indefinite for her first daughter, and the neuter-zoic for her younger ones, though she feels equally close to all.

Two other robust gender systems have developed in the Southeast. In Tunica, last spoken in Louisiana, all nouns are classified as either masculine or feminine. Their gender is reflected in definite articles and in pronouns.

(11) TUNICA GENDER IN NOUN SUFFIXES — Haas 1941d: 65

MASCULINE SG	*-ku*	FEMININE SG	*-hči*
MASCULINE DU	*-ʔúnima*	FEMININE PL	*-sínima, sin*
MASCULINE PL	*-séma, sɛm*		

táčɔhaku	*tánisarahč*
ta-čɔ́ha-ku	*ta-nísara-hči*
the-chief-MASCULINE.SG	the-young.person-FEMININE.SG
'the chief'	'the girl'

The gender of nouns referring to human beings, most animals, and birds reflects the biological sex of their referents. Terms for smaller reptiles and amphibians, fish, shellfish, and insects are generally classified as masculine: turtle, lizard, water salamander, caterpillar, worm, catfish, garfish, crawfish, fly, ant, cricket, flea, louse, mosquito, wood tick, locust. Trees are masculine: tree, oak, hickory, linden, elm, pecan, thorntree, ash tree, stump, stick, log. Fruits and vegetables are generally masculine: persimmon, peach, pumpkin, gourd, bean, marsh potato, seed. Tools are masculine: rake, plow, spade, gun, kettle, drum, cup, bottle, ball, knife, fork. Thunder and lightning are both masculine as well, and personified as men.

Terms for substances viewed as masses or collectives are grammatically feminine: sand or salt, ashes, earth, dust, hilly land, grass or hay, metal or money, grease, cotton, paper or book, beads, trousers, blood, cloth, ribbon, current, meat, water, milk, coffee, urine, mud, cloud or sky. Buildings and parts are feminine: house or building, floor, porch, corner. Abstractions also tend to be feminine: war, sin, a dance, the soul or shade, noise, sickness, day, summer or year. Loanwords are assigned gender as well, such as the feminine *húraka* 'hurricane' and *káfi* 'coffee'.

Gender assignment is not fully predictable, particularly for inanimate objects, but certain patterns accord with general principles of classification of indefinites and collectives. Persons and animals of unknown or unspecified sex are classified as masculine: *ʔuhkʔ ɔ́ka-ku* 'his child'. The biological sex of worms, fish, and insects is not generally salient, so their classification as masculines follows the same pattern. A collection of humans is grammatically masculine singular (*táyomi-ku* 'the Tunica tribe'), but a collection of animals or inanimate objects is feminine singular: *ʔúsa-hči* 'his pack of dogs'. The feminine gender of masses such as water and collectives such as sand or beads reflects the same principle of classification.

Gender is also marked in Tunica pronouns, both independent forms and pronominal affixes on nouns and verbs. The language is unusual in distinguishing the gender of second persons as well as third. Sample paradigms and examples are in (12).

(12) TUNICA PRONOUNS — Haas 1941d: 37-8

	INAL.POSS/STATIVE.SUBJECT	AL.POSS/ACTIVE.OBJECT	INDEPENDENT
1SG	*ʔi-*	*ʔihk-*	*ʔíma*
2MASCULINE.SG	*wi-*	*wihk-*	*má*
2FEMININE.SG	*hi-*	*hihk-*	*héma*
3MASCULINE.SG	*ʔu-*	*ʔuhk-*	*ʔúwi*
3FEMININE.SG	*ti-*	*tihk-*	*tíhči*
1PL	*ʔi-n-*	*ʔink-*	*ʔínima*
2MASCULINE.PL	*wi-n-*	*wink-*	*wínima*
2FEMININE.PL	*hi-n-*	*hink-*	*nínima*
3MASCULINE.DU	*ʔu-n-*	*ʔunk-*	*ʔúnima*
3MASCUINE.PL	*si-*	*sihk-*	*séma*
3FEMININE.PL	*si-n-*	*sink-*	*sínima*

wihkʔónisɛm — *ʔuníwihkí*
wihk-ʔóni-sɛm — *ʔuhk-ní-wíhk-i*
2MASCULINE.SG-person-MASCULINE.PL — 3MASCULINE.SG-tell-2MASCULINE-SML
'your (MASCULINE) people' — 'YOU (MASCULINE) told him'

The pronominal prefixes on verbs agree in grammatical gender with coreferent nouns.

(13) GENDER CONCORD IN TUNICA — Haas 1941d: 50

tétin,	*hónʔɔráni,*	*tánahta*	*hálùht.*
téti	*hónu-ʔára-áni*	*ta-nahta*	*háluhta*
path.FEMININE	descend-3FEMININE.SG.SML-QUOT	the-bank	beneath

'There was a path (FEMININE) going (FEMININE) down under the bank.'

Finally, an elaborate gender system has developed in Yuchi, a language isolate of Oklahoma. Gender distinctions are indicated by independent pronouns (used for emphasis), by pronominal prefixes on verbs, and by articles suffixed to nouns. Ten genders are distinguished. Six are for Yuchi persons (differing in their kin relation to the speaker), one for non-Yuchis and animals, and three for inanimate objects.

(14) YUCHI GENDERS — Wagner 1933: 321, 325

PRO	PRO	ARTICLES	SPEAKER	
hǫdí	*hǫ-*	*-nǫ*	M	SG OR PL Yuchi, except certain female relatives
sɛdí	*sɛ-*	*-sénǫ*	M	SG female Yuchi relative, same or descending generation: sister, daughter, niece, granddaughter
			F	any female Yuchi of same or descending generation
sʔɛdí	*sʔɛ-*	*-sʔénǫ*	F	SG male Yuchi relative, same or descending generation: brother, son, nephew, grandson
ɛdí	*ɛ-*	*-énǫ*	M,F	SG female Yuchi relative, ascending generation: mother, aunt, grandmother
odí	*o-*	*-ónǫ*	F	SG male unrelated Yuchi, or PL Yuchis of same or descending generation
--	*i-*	*-ínǫ*	F	SG male Yuchi of ascending generation: father, uncle, grandfather, husband, or as term of respect for any Yuchis of ascending generation
wɛdí	*wɛ-*	*-wənǫ́*	M,F	any non-Yuchi(s), animals
		-fa	M,F	vertical inanimate objects
		-ʔɛ	M,F	horizontal inanimate objects
		-dji	M,F	round inanimate objects

gɔnɛ́-nǫ́	'the Yuchi man'	*gɔnɛ́-wənǫ́*	'the non-Yuchi man'
tsowatné-sɛnǫ	'my sister'	*táła-wənǫ*	'the wolf'
dotaonɛ-sʔénǫ	'my brother'	*yá-fa*	'the tree'
ditshɛhɛʔ-énǫ	'my mother'	*ya-ʔɛ́*	'the log'
tseíɛʔ-ínǫ	'my father'	*tí-dji*	'the chair'

The articles on inanimate nouns are apparently descended from positional verbs, which they match in shape: *fa* 'horizontal/stand', *ʔe* 'vertical/lie', *dji* 'roundish/sit'. The article *-fa* is used for such objects as standing poles, trees, high mountains, and tall houses. The article *-ʔe* is used for lakes, streams, roads, fields, and logs lying on the ground. The article *-dji* is used for rocks, bushy trees, and chairs. Different abstract nouns appear in all of the inanimate categories: *tsewɔnɛ-fá* 'my (vertical) spirit', *ƙalagoyuné-ʔɛ* 'the (horizontal) sickness', *tsetápax-dji* 'my (round) strength'.

3.4 Shape, consistency, and related features

Certain features of objects, particularly shape, consistency, and animacy, may be reflected in associated numbers and verbs. When systematic patterns are found, they are sometimes referred to as **classifier systems.**

3.4.1 *Classificatory numerals*

In some Athabaskan languages, numerals show different shapes according to what they are used to count. William Poser (p.c. 1996) reports that in Carrier, spoken in British Columbia, there are five sets of numerals and other quantifiers: a generic set, a set for counting humans, one for number of times (multiplicative), one for places or objects that occupy space (area), and one for abstract entities.

(1) CARRIER NUMERALS — William Poser p.c. 1996

	GENERIC	HUMAN	MULTIPLICATIVE	AREAL	ABSTRACT
1	*ʔiłǫ*	*ʔiłǫyən*	*ʔiłoh*	*ʔiłǫyən*	*ʔiłoxʷ*
2	*nanki*	*nane*	*nat*	*nadən*	*naxʷ*
3	*ta*	*tane*	*tat*	*tadən*	*taxʷ*
4	*dənyi*	*dine*	*dit*	*didən*	*dixʷ*

a. *Nane* *ts'eku* *yəsda*
TWO-HUMAN women he is married to
'He is married to two women.'

b. *Nat* *lisman* *'et* *əzdalts'iʔ*
TWO-MULTIPLICATIVE week there we all sat
'We were there for two weeks.'

c. *Ndən* *yoh* *xʷəzdla.*
TWO-AREAL house there are
'There are two houses.'

In Wiyot, an Algic language of Northern California, shape can also be specified when objects are counted (Teeter 1964: 36, 91). The numbers 1-4 are expressed by initial stative verb stems: *kuc-* 'be one', *dit-* 'be two', *dikh-* 'be three', *diyohw-* 'be four'. These stems may be directly inflected as verbs (*kúcad* 'it is one'), or they may be followed by another stem element termed a 'medial'. Some medials that follow initial numerals and descriptive terms indicate the general shape of objects: *-okh* 'longish object', *-atk* 'roundish object', *-apł* 'hairlike object'. The results are constructions like *dikh-okh* 'three longish objects', *dot-okh* 'large longish object'.

(2) WIYOT SHAPE SPECIFICATION WITH NUMERAL STEMS — Teeter 1993: I.42, 6

a. *búphal,* *kúc-ok,* *bałwíhmad.*
redwood log one-longish.object it floats downriver
'One redwood log floated downriver.'

b. *hi* *lágił* *toku,* *dít-ok,* *hóhrač*
then they go back two-longish.object snake
'They went, two snakes.'

For counting five or more, the numeral is followed by the initial stem *hal-* 'so many' plus the classifier medial: *takłaluk hal-okh* 'six so.many-longish' = 'six long objects'.

A more elaborate counting system appears in Yurok, the other California Algic language (Robins 1958: 86-92). Yurok contains 15 different sets of numerals, used with different kinds of objects: a) human beings; b) birds and animals; c) round things, rocks, dollars, etc.; d) tools, etc.; e) plants; f) trees and sticks; g) body parts, streams, utensils, and clothes; h) ropes, worms, snakes, etc.; i) flat things; j) houses; k) boats; l) times; m) days; n) arm's lengths; and o) finger joints, (a measurement of dentalium shells). Robins provides 10 numbers for sets a-n. The first three are in (3).

(3) YUROK NUMBERS — Robins 1958: 87-9

	a	b	c	d	e	f	g
1	*ko·raʔ*	*kɹhtɹʔy*	*kohtoh*	*kɹhtɹpiʔ*	*kohtekʼʷoʔ*	*kohteʔr*	*ko·raʔ*
2	*niʔił*	*nɹʔɹʔy*	*noʔoh*	*nɹʔɹpiʔ*	*naʔakʼʷoʔn*	*naʔaʔr*	*naʔaʔn*
3	*nahkseył*	*nɹhksɹʔɹʔynàkhsoh*		*nɹhksɹpiʔ*	*nahksekʼʷoʔn*	*nahkseʔr*	*nahkseʔn*

	h	i	j	k	l	m	n
1	*kohtekʼ*	*kohtoḱs*	*kohteʔli*	*kohtey*	*kohci*	*kohcemoył*	*kohcɹmɹyš*
2	*naʔaḳ*	*noʔoḱs*	*naʔagli*	*naʔey*	*naʔmi*	*naʔamoył*	*naʔamɹyš*
3	*nahksekʼ*	*nahksoḱs*	*nahkseʔli*	*nahksey*	*nahksemi*	*nahksemoył*	*nahksemɹyš*

Only three numbers were recorded for dentalia: 1 *kohtepir*, 2 *naʔapir*, 3 *nahksepir*.

Most numbers precede the nouns they quantify. Months are counted as round objects, perhaps after the moon. Years are counted as times with *lok* 'it is a year'.

(4) YUROK ENUMERATED NOUNS — Robins 1958: 86

niʔil pegək	'two men'	*kohtoh hegor*	'one month'
nahksoh haʔa·g	'three rocks'	*kohci lok*	'one year'

Robins provides some alternate forms supplied by different speakers. Few speakers

remembered the full series intact, but there was a tendency for the numerals appropriate to human beings and animals to persist and for the forms for round things to be generalized to nouns of the other classes.

Shape distinctions with numbers can also be seen in languages of the Wakashan family of British Columbia. In his description of Nootka, Swadesh (1936-8: 88) lists a set of suffixes that are used almost exclusively with numeral and quantifying stems. Some indicate the general shape of objects counted, others the general category.

(5) NOOTKA SUFFIXES TO NUMERAL STEMS — Swadesh 1936-8: 88

-qimɬ	'round objects'	*-qʔičh*	'years'
-p̓i·ɬ	'long flat objects'	*-y̓aɬ*	'fathoms'
-c̓iq	'long objects'	*-p̓it*	'times'
-(š,k)taq-	'bunches, groups'	*-či·ɬ*	'days'
-(š,k)taqimɬ	'families, bands'	*-sa·co*	'places'
-ḥta-	'sackfuls'	*i·qʷ*	'score'
-sa·ḥtak	'kinds, varieties'		

The stem *ḥayo* 'ten' can be used alone to mean 'ten things' or with suffixes to yield more specific terms: *ḥayop̓iɬ* 'ten long, flat objects', *ḥayoqomɬ* 'ten round objects', *ḥayoc̓iq* 'ten long objects', etc. Classification by shape goes beyond obvious visible features. In the passage below from a narrative, songs are classified as long and flat.

(6) NOOTKA SHAPE SUFFIXES IN CONTEXT — Sapir & Swadesh 1939: 104

ḥačatakma	*ʔokʷi·cnak*	*no·k*	*soč̓a-p̓iɬ-ok*	*ʔo·s*	*ḥayo-p̓iɬ-ok.*
everyone is	possess his own	song	5-flat-INTR	some	10-flat-INTR

'Everyone has his own songs; some have five, some ten.'

3.4.2 *Classificatory verbs*

In a number of languages, the shape, consistency, and other features of objects are reflected in certain verbs with which they cooccur. The best-known systems of this type are the classificatory verbs of the Athabaskan languages, described in a number of works including Hoijer 1945b, Davidson et al. 1963, Henry & Henry 1965, Landar 1964, 1965, 1967a, 1976, Berlin 1967, Haas 1967b, 1968, Basso 1968, Witherspoon 1971, 1977, 1980, Lawson 1972, Garrison 1974, Carter 1976, Cook 1986b, and Rushforth 1991. The languages vary slightly in the numbers of categories distinguished, from about 9 in Bearlake and Hupa to 13 in Western Apache. The systems are otherwise quite similar.

Rushforth reports that in Bearlake, an Athabaskan language of the Northwest Territories, one may ask for tea (*lidí*, from French *le thé*) in different ways.

(7) BEARLAKE ALTERNATIVES — Rushforth 1991: 254

Lidí	*seghánį-chu*	'Hand me the tea'	(a single box or bag)
Lidí	*seghánį-wa*	'Hand me the tea'	(boxes or bags)
Lidí	*seghánį-hxo*	'Hand me some tea'	(a handful)
Lidí	*seghánį-hxe*	'Hand me the tea'	(in a deep, closed container)
Lidí	*seghánį-hge*	'Hand me the tea'	(a cup, open, shallow container)

The choice of verb root depends on the shape, consistency, animacy, number, and containment of the object in question. Only certain kinds of states and events are expressed by verbs that distinguish these features, generally verbs of position, motion, and handling, including throwing and dropping. These are just the situations in which the shape, consistency, number, animacy, and containment of the object at rest, moving, or being handled makes a difference in the nature of the state or action. Hot tea in a cup occupies space in a different way from a handful of tea leaves. It moves differently and is carried differently. The verb choice shows an absolutive basis: with intransitive verbs it is the nature of the subject that is crucial (the entity sitting or moving), while with transitives it is the nature of the object (the entity being handled).

Chipewyan, a Northern Athabaskan language of Saskatchewan, shows a similar system. Carter identified 10 categories of verbs by asking speakers such questions as "How do you say 'X lies there', 'Give me X', 'Hand me X', 'Bring me X,' 'He found X', 'I throw X', 'X falls', 'I see X', 'He made X', 'I touch X'?" (1976).

(8) CHIPEWYAN 'be located' — Carter 1976: 25

-ʔą	**Inanimate solid objects:** lake, ax, dollar, coil of rope, 25 cent piece, knife, pipe, stone, money, $5 bill, hat, orange, sewing machine, coin, ear, ribs, head, tongue, kidney, liver, fat, chin meat, back claws, anus, vagina, hide, show, button, the ground, hand, house, ice, human skeleton, loaf of bread, chunk of bear meat, egg, meat, handful of mud, ball, chunk of ice
-łti	**Dead beings:** dead person, bear carcass, dead dog, raw fish
-tį	**Sleeping beings:** person, sleeping baby, sleeping bear, girl
-da	**Awake beings:** frog, spider, sitting bear, sitting person, beaver, sitting baby
-kǫ	**Liquids:** mud, mud in a container, blood, water, boiling water, coffee, milk, tea in a cup
-dzáy	**Granular masses:** pile of sand, pile of sugar, instant milk, fish eggs, lots of feathers, loose tobacco.
-la	**Ropelike objects, objects in sets:** book, several arrows, playing cards, eyeglasses, pair of gloves, rope, two or more fish, several coins, three dogs, two oranges, two girls, more than one can of beer, intestinal fat, caribou

forearm hide to be made into mukluks, veins, babiche, testicles, pair of shoes, more than one button, hair, more than one feather, knife, rifle

-tą **Sticklike objects, empty containers:** airplane, bow, empty box, canoe, chair, firewood, rifle, spear, cigarette, pen, match, truck, toboggan, one arrow, bone, one playing card, coffee cup, diamond (playing card), spade (playing card), hind leg, front leg, dew claws, penis, finger, stick of fish, frying pan, empty pail, tree limb, fork, spoon, cup, needle, stick, person's picture

-łtą **Containers with contents:** box with stuff in it, one can of beer, pack of cigarettes, can of coca-cola, bag of flour, glass of water, drum of gasoline, bottle of beer, testicles in a scrotum, suitcase, bag of sugar, container of mud, ice, catsup (in bottle), cup of coffee, rice, box of salt, bottle of whisky

-łtšuθ **Fabriclike objects:** calendar, parka, pants, sheet of paper, writing pad, bear hide, book, caribou forearm hide, one glove, grease, tree's leaf, bear meat (a layer of muscle), blanket, dress.

Not all sets of classificatory verbs show the full range of distinctions. To describe falling, the same root *-tłi* is used for liquids, granular masses, and ropelike or plural objects. As Carter notes, these substances share the characteristic of not falling compactly. As in other classificatory systems, the verbal category for solid (round) objects serves as a default for situations involving objects not otherwise classified.

As can be seen from the sentences translated 'Hand me the tea', the choice of verb root is not mechanically determined by the noun with which it is associated: this is not a system of agreement. The choice of verb provides information about the kind of state or activity described. It can also establish expectations about the nature of the object involved. Because of this, it can serve as an aid in sorting out reference. Rushforth illustrates this function with the alternatives below.

(9) BEARLAKE ANAPHORIC IMPLICATIONS — Rushforth 1991: 255

Dene	*'ídidzené*	*kwik'u*	*t'á*	*tłį*	*whehk'é.*
person	yesterday	gun	with	dog	he shot it

'A person shot a dog with a gun yesterday.

a. *Tułíta gots'ę́ détǫ.*
Fort Norman to it was taken (sticklike)
It [the gun] was taken to Fort Norman.'

b. *Tułíta gots'ę́ déhtį.*
Fort Norman to it was taken (animate)
He [that person] was taken to Fort Norman.'

Rushforth also notes that on relatively rare occasions speakers may exploit the classificatory system for expressive purposes. The command in (10) is technically ungrammatical, a command to a person that uses the positional root appropriate for a single, solid, inanimate object rather than the correct root for animate beings.

(10) BEARLAKE FLOUTING OF CONVENTION — Rushforth 1991: 263

**Weno'ǫ*
You (single solid object) sit down
'Sit down!'

The command was uttered as a joke to a friend and explained later as focusing on the fatness of the friend.

A number of languages outside of the Athabaskan family also show sets of verb roots that distinguish such features as shape, consistency, number, and animacy. In some languages the number of verbs involved and the distinctions made are limited, usually to situations involving round, long, liquid, animate, and multiple entities. Atsugewi, a Palaihnihan language of Northern California, contains roots meaning 'move or be located' with more specific indications of consistency. Talmy (1972: 29) mentions the roots *-qput-* 'for dirtlike material to move or be located', *-swal-* 'for limp (not stiff or resilient) material to move or be located', *-sl̓aq̓-* 'for runny, icky material to move or be located', and *-l̓-* 'for a planar object to move or be located'.

(11) ATSUGEWI CONSISTENCY — Talmy 1972: 436, 433

sma·sl̓aq̓ipsnu	*sl̓uswalíc̓*
s'w-ma-sl̓aq̓-psn^{w}-im	*s'w-tu-swal-ic̓*
I-by.foot-runny.material-into.enclosure-thither	I-by.hand-limp.material-up
'I tracked up the house (with manure I stepped in).'	'I picked up the rag.'

In some languages shape and other features are distinguished in both counting and position/motion/handling constructions, particularly those languages in which numbers are expressed with verbs. In Kwakwala, a Northern Wakashan language of British Columbia, as in its Southern relative Nootka, both kinds of constructions consist of an initial root plus qualifying suffix. There are about 20 classifiers for quantifying expressions, though their productivity varies. The main ones are in (12).

(12) KWAKWALA SUFFIXES TO NUMERALS — Berman 1990: 40, 38

-uk^{w}	'human'	*-sgəm*	'bulky'
-c̓aq	'long'	*-x̌ǩa*	'hollow'
-x̌sa	'flat'	*-zaq*	'hole'

musgəmi	*migʷat*	*mukʷi*	*bibəǧanəm*
mu-sgəm-i	*migʷat*	*mu=ukʷ-i*	*bibəgʷanəm*
four-bulky-DEM	seal	four=human-DEM	people
'four seals'		'four men'	
muc̓aqi	*haʔənaƛ̓əm*	*məwix̣ƛ̓ɛ*	*łuəqʷəlił*
mu-c̓aq-i	*haʔənaƛ̓əm*	*mu-əx̣ƛ̓a-i*	*łuəqʷəlił*
four-long-DEM	arrows	four-hollow-DEM	house.dishes
'four arrows'		'four house dishes'	

Berman notes that the suffix *-sgəm* 'bulky object' is the most general, used with all quadrupeds, stones, objects with hollow interiors but a cover (houses, boxes, covered baskets), abstract notions (words), and anything very large, including fat humans. The suffix *-x̣ƛ̓a* 'hollow, dish-shaped object' is used with dishes, spoons, ladles, cradles, and buckets, but not canoes. The suffix *-c̓aq* 'long object' is used with canoes, sticks, poles, arrows, trees, beams, and ropes. The suffix *-x̣sa* 'flat object' is used with fish, blankets, leaves, mats, and boards. The suffix *-zəq* 'hole' is used for holes through boards and holes in the ground. Another set of classifiers that appear with numeral roots are mensural: *-an* 'fingerwidths', *-xʷaš* 'days', *-pana* 'times', *-xʔidała* 'kinds'.

The language also contains sets of stems for location and handling that distinguish the shape of the entity located or handled. Some of the shape distinctions are the same as those distinguished by the numeral suffixes. The stems also specify the orientation of the entity involved.

(13) KWAKWALA STEMS OF LOCATION — Berman 1990: 52-6

ƛ̓axʷ-	'vertical human is somewhere'
kʷəl-	'horizontal human is somewhere'
q̓ʷa-	'vertical humans or long objects are somewhere'
ƛ̓a-	'vertical long object is somewhere'
kat-	'horizontal long object is somewhere'
k̓ukʷ-	'vertical flat object is somewhere'
xəkʷ-	'vertical flat objects are somewhere'
pəlq-	'horizontal flat object is somewhere on its front'
n̓əƛ̓-	'horizontal flat object is somewhere on its back'
m̓akʷ-	'bulky object is somewhere'
hən-	'hollow object is somewhere rightside up'
məx-	'hollow objects are somewhere rightside up'
qəp-	'hollow object is somewhere upside down'
kʷaxʷ-	'hole is somewhere'

These stems form the basis of large numbers of derived forms, but they are always followed by a locative suffix specifying the location, as 'in the water' below.

(14) KWAKWALA LOCATIVE CONSTRUCTION — Boas 1921: 451 cited in Berman 1990: 53

lɛ	*nixəmułtudx̣a*	*migʷati*	*qa*	*him̓is*
lɛ	*nix-əm-w̓əłto-d-x̣a*	*migʷat-i*	*qa*	*him̓is*
AUX	pull.on.rope-PL-out.of.canoe-INCHOATIVE-3OBJ	seal-DEM	purpose	AUX

'He pulls the hair seals out of the canoe so that

m̓əkʷəmstalisa	*dəmsxi*	*w̓apa.*
m̓akʷ-əm-sta=is-a	*dəmsx-i*	*w̓ap-a*
bulky.obj.is.somewhere-PL-in.water-in.open space-DEM	saltwater-DEM	water-DEM

they are in shallow water.'

Any of the stems of location may be converted to a transitive verb of handling with the transitivizing suffix *-a*, but there are also more specific verbs of handling that specify certain manners. These too show shape distinctions. They include sets of stems meaning 'carry on shoulders', 'carry in arms or hands', 'put down', 'break or tear', 'use for an activity', 'make', 'push', 'throw', and others. There are, for example, different stems *hamt-* 'carry a person on shoulders', *w̓ik-* 'carry a long object on shoulders', *y̓əlkʷ-* 'carry a flat object on shoulders', and *t̓ix-* 'carry a bulky object on shoulders'.

(15) KWAKWALA HANDLING CONSTRUCTION — Boas 1921: 62 cited in Berman 1990: 56

lai	*y̓əlkʷʔəłalaqəx̣s*
lai	*y̓əlkʷ-w̓əł̓a-q-x̣s*
AUX	carry.flat.object.on.shoulder-out.of.house-3OBJECT-SUBORDINATE

'He carries them [the boards] out.'

In some languages, the diachronic sources of verb stems like these can still be discerned. One source is noun incorporation. This history can be seen to underlie the classificatory verbs of Cherokee, an Iroquoian language of North Carolina and Oklahoma. Most of the Cherokee sets of verbs indicate handling of some kind (Blankenship 1996: 64): 'have', 'hold', 'handle', 'break', 'drop', 'give', 'get', 'carry', 'leave behind', 'hang up', 'take down', 'hide', 'find', 'pick up', 'set down', 'put into water', 'take out of water', 'put into fire', 'take out of fire', 'put into a container', 'take out of a container'. Some intransitive verbs derived from the transitives also show alternations: 'fall' (related to 'drop'), 'hang' ('hang up'), and 'lie' ('have'). Others are 'send', 'eat', 'wash'. The sets of verbs contain up to five members each. They may

distinguish animates (all animals and plants), liquids, compact objects, flexible objects, and/or long objects. Abstract entities and other miscellaneous objects, including those that are unknown, occur with the class of compact objects, the unmarked class.

(16) CHEROKEE VERB CLASSES — Blankenship 1996: 61

a. *wèésa* *gà-káànèè-'a.*
cat 3SG-give-PRESENT
'She is giving him a cat.'

b. *àma* *gà-nèèhnéé-'a.*
water 3SG-give-PRESENT
'She is giving him water.'

c. *àhnàwo* *gà-nvvnèè-'a.*
shirt 3SG-give-PRESENT
'She is giving him a shirt.'

d. *gànsda* *àa-déé-'a.*
stick 3SG-give-PRESENT
'She is giving him a stick.'

e. *kwàna* *àa-hnèè-'a.*
peach 3SG-give-PRESENT
'She is giving him a peach.'

When the verb stems within a set are compared, they can be seen to share certain portions of form (*-nèè-*) and differ in others (*-káà-*, *-nèèh-*, *nvv-* . . .). Some of the contrasting elements are cognate with incorporated noun roots in the Northern Iroquoian languages, where noun incorporation is still highly productive (Mithun 1986a). The clearest is the element *-nèèh-* for liquids, cognate with the Northern Iroquoian **-hnek-* 'liquid'. In the Northern languages, noun incorporation, whereby a noun stem is compounded with a verb root, is still used pervasively for classificatory purposes.

(17) MOHAWK CLASSIFICATORY INCORPORATION

Otsì:tsa' *wa'khnekahní:non*
o-tsi?tsy-a? *wa?-k-hnek-a-hninu-?*
NEUTER-flower/wine-NOUN.SUFFIX FACTUAL-2SG.AGENT-liquid-EPENTHETIC-buy-PRF
'I (liquid-) bought some wine.'

If the classificatory stem is not incorporated, a quite different sense results.

(18) MOHAWK CLAUSE WITHOUT CLASSIFIER

Otsì:tsa' *wa'khní:non*
o-tsi?tsy-a? *wa?-k-hninu-?*
NEUTER-flower-NOUN.SUFFIX FACTUAL-2SG.AGENT-buy-PERFECTIVE
'I bought flowers.'

A number of languages have developed sets of productive affixes that derive verbs distinguishing the kinds of features seen in classificatory verb systems. Eyak, a language of Alaska remotely related to the Athabaskan languages, does not show the same large sets of classificatory verb stems as those languages, but it does show an elaboration of verbal prefixes that imply distinctions of a similar nature, reflecting properties of the subjects of intransitive verbs ('lie') or the objects of transitives ('give'). Some entities, such as higher animals and certain other concrete objects, are never characterized by a prefix, but many others are. Krauss (1968) provides a sample of the prefixes, which he terms 'class marks', along with examples of the kinds of entities they characterize. Some have obvious cohesive meanings, often in terms of shape, while others are less transparent.

(19) EYAK VERBAL PREFIXES — Krauss 1968: 195-6

gl- liquids, butter, salt water, table salt
łx- all berries, fruits, beads, many granular objects
ti·l- leaves, plume feathers, pelts (including glove, mitt but not cloth, shoe)
x̣d- matchsticks, logs, poles, bear speakers, days, clouds, rainbows, but not sticks, fish spears, months, or smoke
d- table, board, house, store, arrow, fish spear, sled, wild celery, most tree species, fire, song, north wind, tail, porcupine quill, lips, egg, shell, bracelet, ring, money, lamp, knife, frying pan, mussel, collar, but not chair, pot or cockle
dl- stone, ulu, earth, branch of tree, net, needle, ear, button
l- kidney, fat, heart, teat, hat, axe, shovel, canoe paddle, mountain, moon, basket, abalone

As in other systems, the verbal prefixes are not simple agreement markers. Different kinds of objects referred to by the same noun may be characterized by different prefixes on associated verbs. The noun *yq·* 'medicine', for example, does not appear with verbs containing one of the above prefixes when it is used generically, but when it is used for a potion or liquid medicine, the verb shows the prefix *gl-* ('liquid'); when it is used for pills, the verb shows the prefix *łx-* ('small round objects'). When objects are not in their normal shape or condition, no prefix appears with the verb. Thus 'driftwood' (*ʔuʔɬ*) usually appears with a *d-* verb, but if the driftwood is broken up, there is no verbal prefix. At the same time, the distinctions are not purely semantic. Different nouns with similar meanings are sometimes associated with different verbal prefixes. The noun *-šaʷ* 'head, head of hair' appears with *l-* verbs, while the noun *-lɔqah* 'head' appears with *d-* verbs. Krauss shows that the prefixes interact in interesting ways with the limited system of classificatory roots in the language.

In several languages the functions of shape prefixes are still more transparent. Haida, spoken in Alaska and British Columbia, contains verbal prefixes that reflect such features as shape, size, and animacy.

(20) HAIDA SHAPE PREFIXES — Levine 1977: 139-50

łga-	'branching or forking from the end of a central axis': chair, fork, bed, stove, binocular, scissor, adze, halibut hook
ǧa-	'flat': leaf, box lid, mirror, knife, shovel, lake, apron
gu-	'roundish, flat on one side': mask, flounder, hat, abalone, button
q̓ay-	'spheroid or cylindrical': drum, hammer, clam, stone, copper
x̌un-	'mass or aggregate': bunch of clothing
łq̓a-	'branching from central axis': tree branches, combs
tay-	(meaning unclear): shirt, kerchief, axe
sda-	'rigid circular': ring, bracelet, nose ring, black cod hook
i̓a-	'long, flexible': rope, net, belt
sḵa-	'long, cylindrical': lamp, bottle, spruce cone, pipe
ḵu-	(meaning unclear): chisel, bag, nail, red cod, object wrapped as parcel
sq̓a-	'long, narrow, rigid': stick, paddle, harpoon, poker, cane, arrow, needle
i̓aw-	'relatively long, teardrop-shaped': feather, spoon
ska-	'small, round': crabapple, red huckleberry, potato, cranberry, berry
łgi-	'very large, cylindrical': log, totem pole
sx̌ʌ-	(only one example): firewood lying in a pile or mass together
ci-	'container-like objects': box, shirt, coat, spruce root basket, dress, pillow
c̓is-	'rigid containers open at top': box, greasebox, pail, cooking pot
gi-	'non-rigid, flat, rectangular': blanket, kerchief, fabric, apron, canoe
q̓uł-	(only one example): flower
ʔis-	'inanimate or marginally animate': mussels, rope
x̌ʌ-	'animate': dog
squd-	(only one example): red huckleberries
kʌ-, xʌ-	'small'
qil-, yu-	'large'
i̓ʌb-	'straight'
i̓ʌm-	'thin or narrow'
dʌb-	'short'
dʌm-	'fat or wide'
sgʌb-	'crooked'
sgʌm-	'round'
x̌ad-	'too wide or large in unpleasing way (including persons)'

ǧudłgaǧaŋʔway	*ła*	*łgaǧwidaŋ*
ǧudłgaǧaŋʔu-gay	*ła*	*łga-ǧwi-da-gʌŋ*
chair-OLD.INFORMATION	I	branching-fall-CAUSATIVE-3SG

'I dropped the chair.'

Some of the prefixes are more specific in meaning than others. Levine notes that the most knowledgeable speakers tend to use the more specific ones in speech.

Many different verb roots can appear with shape prefixes, including number roots used for counting. Some roots never appear without a shape prefix. Roots that require further narrowing with a prefix show meanings not unlike those of the classificatory verbs in Athabaskan languages, pertaining to position, motion, and handling. They include *ǧudi* 'maintain a stationary position on a surface', *łʌŋ* 'position above', *xyu* 'hang', *gid* 'lean against', *ǧwi* 'fall', *xid* 'vertical movement', *dal* 'continuous horizontal motion', *c̓i* 'move from one place to another', *ǧaxunaŋ* 'roll', *ǧulaŋ* 'rotary motion', *giŋ* 'hold, support', *sʌʌ* 'put (inside), arrange' *ǰu* 'catch', *sła* 'remove', *ǧaw* 'lower', *sgid* 'shove', and *łǧił* 'wind, turn'.

A likely diachronic source for the system of shape prefixes is noun-verb compounding, which persists in modern Haida. Levine (1977: 153) points out resemblances between some of the prefixes and nouns with similar forms. The prefix *i̓aw-* 'relatively long, teardrop-shaped' resembles the beginning of the noun *i̓aǧun* 'feather'; the prefix *sq̓a-* 'long, narrow, rigid' resembles the noun *sq̓aŋʔu* 'stick'.

A large number of languages contain sets of postural verbs, often reduced to auxiliaries or affixes, that reflect the proportions of entities. The verbs are commonly used to state existence and sometimes possession; the auxiliaries can appear in many kinds of predications. Tall objects are said to stand (the vertical dimension exceeds the horizontal), round objects sit (the vertical and horizontal are roughly equivalent), and flat or long objects lie (the horizontal exceeds the vertical). Kennard shows this pattern in Mandan, a Siouan language of North Dakota.

(21) MANDAN POSTURAL VERBS — Kennard 1936: 31

a.

wéreх	*nakóc*
wéreх	*nak-oc*
pot	sit-PRESENT

'A pot was there (sitting).'

b.

mútixtèna	*téromakoc*
máti-xtɛ-na	*tɛ-romakoc*
village-big-EMPHATIC	stand-NARRATIVE.PAST

'There was a big village.'

c. *má:ta* *makómakoc*
má:ta *mak-omakoc*
river lie-NARRATIVE.PAST
'The river was there.'

The postural verbs have also been grammaticized in the Siouan languages as continuative aspect suffixes: Mandan *ptáhgkeka'* 'he was running around (upright), they say', *mah ísekanakeròmakoc* 'he was (sitting) making an arrow', *minúxamgkɛka'* 'he was playing (prone)' (Kennard 1936: 31). The same markers have also been combined with Mandan demonstratives *dɛ* 'this' and *gt* 'that'.

(22) MANDAN DEMONSTRATIVE PRONOUNS Kennard 1936: 28

démgk	'this one, lying'	*gtemgk*	'that one, lying'
dénak	'this one, sitting'	*gtenak*	'that one, sitting'
déhgk	'this one, standing'	*gtehgk*	'that one, standing'

They have also evolved into suffixed proximal demonstrative determiners.

(23) MANDAN DEMONSTRATIVE DETERMINERS Kennard 1936: 28

óti-hgk 'this lodge'
máta-mgk 'this river'
háre-nak 'this cloud'

In the Dhegiha branch of Siouan the development has gone still further. Elaborate systems of articles distinguish posture (sitting, standing, lying), animacy, number, distribution (scattered versus collective), and movement (Boas 1907, Boas & Swanton 1911, Robert Rankin p.c. 1994). Examples here are Ponca, a Dhegiha language of Oklahoma, supplied by John Koontz, from his own fieldwork and material from Dorsey (1890, 1891) and Boas (1907).

(24) PONCA CLASSIFICATORY ARTICLES John Koontz 1984 ms, p.c. 1993

INANIMATE ARTICLES

$=k^he$	horizontal	$=ðg$	rounded
$=t^he$	vertical	$=ge$	scattered

ANIMATE ARTICLES

$=ak^ha$	sg. subject at rest	$=t^hg$	sg. standing object
$=ama$	sg. subject in motion	$=ði$	sg. moving object
	pl. subject motion or rest	$=ðik^he$	sg. object at rest
$=ma$	all of some animate group	$=ðgk^ha$	pl. object at rest

The article $=k^he$ is used not only for trees lying on the ground, roads, streams, the sky (long and flat), and a ridge, but also for animals (snakes) or persons stretched out or dead (corpses). It is used for singulars or collectives like a stack, a trail (line of tracks), and a freight train. As in many systems the rounded category ($=ðg$) can be used for a variety of objects, including a pack, apple, hill, village (circle of dwellings), lake, door flap, and spot. *=ge* is a distributive indicating scattered objects: packs, hills, trees. $=ak^ha$ is not only for animates but also inanimate entities with supernatural power. The articles $=ðik^he$ and $=ðgk^ha$ indicate animate objects at rest, in a sitting position, but also those at home or in a place where they habitually stay.

(25) PONCA CLASSIFICATORY ARTICLES John Koontz p.c. 1993

a. *waʔúžigá=ama agðá·=biama.*
'The [singular animate moving] old woman set out for home.'

b. *gp^hą́=ama bðú·ga págahgðei·ða=biama*
'All the [plural animate] elks raised their heads.'

c. *gp^hą́=ma waðá·t^het^he eí·waʔi·*
'They gave the [inanimate vertical] food to the [animate plural] elks.'

d. *gp^hą́=t^hg waðá·t^het^he eí·ʔi.*
'He gave [inanimate vertical] food to the [singular animate standing] elk.'

e. *iką́=ðik^he=di kà·ci k^hiaži=ama.*
'For a long while the [singular animate moving] rabbit did not come home to his [singular animate object at home] grandmother.'

f. *matcíge=ama ú·wakiyà=biamà wasábe=ðgk^ha.*
The [singular animate moving] rabbit talked to the [plural animate object at home] black bears.'

Watkins (1976a) shows that classification by postural verbs is a strong areal feature of the Southeast, appearing not only in Siouan but also in the Muskogean family, Tunica, Atakapa, Chitimacha, Yuchi, and Caddo. Because it is so well developed throughout the Siouan family, in languages of the North as well as the Southeast, she concludes that it probably originated within Siouan. She points out that it was not the forms that were borrowed, since they differ in shape, but rather the concept.

3.5 Means and manner: instrumental affixes

A number of unrelated languages and language families in North America show sets of derivational markers traditionally termed 'instrumental affixes'. A sample can be seen in the verbs below from Central Pomo, of northern California.

(1) CENTRAL POMO INSTRUMENTAL PREFIXES — Frances Jack, speaker

ɬ̓áw 'feel, sense'
- *da-ɬ̓áw* 'feel with the hand'
- *ʔ-ɬ̓áw* 'touch with the fingers'
- *h-ɬ̓áw* 'feel with a stick, as testing the depth of water'
- *qa-ɬ̓áw* 'taste food'
- *s-ɬ̓áw* 'taste a drink'
- *ča-ɬ̓áw* 'feel by sitting or lying, as a hard chair or lumpy bed'
- *ba-ɬ̓áw* 'hear'
- *pʰ-ɬ̓áw* 'see, appear'
- *m-ɬ̓áw* 'feel warmth, be cooked'
- *š-ɬ̓áw* 'heft, lift an object to see how heavy it is'
- *čʰ-ɬ̓áw* 'feel, as the hard shell of walnuts when cracking them'

tʰáw 'come open, untied'
- *da-tʰáw* 'push open a door'
- *ʔ-tʰáw* 'force open with the fingers, as in shelling peas or beans'
- *h-tʰáw* 'open by poking, as a gate with a cane'
- *qa-tʰáw* 'unlock'
- *ča-tʰáw* 'open a can with a can opener or knife'
- *ba-tʰáw* 'gossip, opening up the past by saying bad things'
- *pʰ-tʰáw* 'blow open, as the wind opening a door or gate'
- *ma-tʰáw* 'open a jar by twisting off the lid'
- *m-tʰáw* 'unravel, for a drunken man to become sober'
- *p̓-tʰáw* 'unravel a seam'
- *š-tʰáw* 'untie something'

Affixes of this type appear in languages of the Siouan-Catawban family stretching from the Southeast west and north over the Plains; the Numic branch of the Uto-Aztecan family covering a large area to the West; the Yuman and Chumash families in southern California; the Pomoan languages and Atsugewi, Achumawi, Chimariko, Shasta, Maidu, and Wappo in northern California; Washo in western Nevada; Klamath, and Takelma in Oregon; the Sahaptian languages Nez Perce and Sahaptin in Oregon, Idaho, and Washington; Kutenai in Montana and British Columbia; and

Haida in British Columbia and Alaska. It is easy to see why the markers were first termed 'instrumental affixes': they seem to name the instrument with which an action is accomplished. The Central Pomo prefixes might be translated *da-* 'with the hand', *ʔ-* 'with the fingers', *h-* 'with a stick', *qa-* 'with the teeth', *s-* 'with the tongue', *ba-* 'with the voice', *pʰ-* 'with the eye or the wind', *ča-* 'with the seat or full body mass' or 'with a knife', and *m-* 'with heat' or 'from internal force'.

A closer look at their ranges of use shows that the meanings of the affixes are not always as noun-like as they first appear. They often indicate not a specific instrument but a kind of motion. The prefix *h-*, associated with a stick above, indicates poking, jabbing, thrusting, or throwing motions, as in *h-ném* 'stab', *h-ʔó·n* 'walk along shining a flashlight on the path', and *h-lá·c̓* 'throw and miss'. The verb *h-ɬóš* means 'knock something off by thrusting with a stick', but if someone knocks an object off by swinging the stick instead of poking, a different prefix is used: *pʰ-ɬóš*. In fact not all uses of either *h-* or *pʰ-* even involve a stick. Addition of the prefix *h-* to the root *yól* 'mix' yields *h-yól* 'add salt or pepper', because of the thrusting motion applied to a shaker. Addition of *pʰ-* to the root *lí-* 'wave' (with reduplication) yields *pʰ-líp̓ʰlic̓* 'wag' (what a dog does with a tail), because of the swinging motion. In the end, the functions of the prefixes often cannot be reduced to a single semantic feature; they form networks of associated meanings. The prefix *ma-* often invokes the feet, as in *ma-ɬ̓ém* 'step on something', *ma-kél* 'wipe the feet', and *ma-néw* 'dance', but it also refers to twisting motions with other body parts: *ma-l̓sóq̓* 'knead bread', *ma-ɬ̓ól̓sčiw* 'squeeze something', *ma-p̓á·c̓čiw* 'grab a large handful of clover and break it off', *ma-qʰó·c̓* 'pull something off with the whole hand, as a large button'. Central Pomo contains a second prefix, *m-* pertaining to the feet. It, too, shows a range of meaning, involving kicking, or action by another protuberance such as the nose or a horn: *m-ɬóš* 'kick someone or something', *m-tʰí·c̓* 'kick up out of the ground', *m-dé·n* 'kick something along, dance along, drive along with foot on gas pedal', *m-čék̓čiw* 'trip', *m-láš* 'miss when kicking, miss in marbles', *m-ɬ̓ólčiw* 'knock over with the foot or elbow', *m-šéw* 'notice an odor', *m-séc̓* 'sniff at once', *m-lúš* 'cap of bottle comes off in use', *m-néw* 'butt, like a bull or ram'. There are also other prefixes with the same shape *m-*, due to the historical loss of certain vowels. One indicates heat: *m-ɬ̓é·c̓* 'catch fire', *m-yéw* 'fire to go out', *m-lóɬ̓* 'be overcooked'. The other reflects internal force or spontaneous action: *m-k̓ún* 'be constipated', *m-ɬ̓ún* 'be clogged up', *m-qʰáɬ̓* 'spring a leak, as a bag overloaded with flour', *m-bó·c̓* 'for an overfilled balloon to pop'.

In many languages, instrumental affixes can add an element of causation as well. The Central Pomo root *léy* is used 'for a group to die'. When instrumental prefixes are added, the result is often a causative verb of killing or exhausting: *ʔ-léy* 'kill something off, as rabbits, gophers, etc.' (*ʔ-* 'by falling'), *ča-léy* 'wear out the seat of one's pants or a cushion' ('by sitting') or 'slice something up' ('by sawing'), *čʰ-léy* 'win

everything in gambling' ('by gambling'), *da-léy* 'pick everything up, as all nuts on the ground' ('by pushing'), *m-léy* 'get burned up' ('by heat'), *ma-léy* 'wear out the sole of one's shoe' ('by stepping'), *pʰa-léy* 'for a river to completely erode the bank' ('by flowing'), *p̓-léy* 'finish sewing something' ('by encircling'), *qa-léy* 'eat something all up' ('by biting'), *s-léy* 'drink something all up' ('by sucking'), *š-léy* 'finish picking something, as sea urchins from rocks' ('by pulling'), *ša-léy* 'dip everything out of a bucket' ('by handle').

The affixes create lexical items, often with more specific associations than could be predicted from their parts. When the Central Pomo prefix *h-* precedes the root *ɬé·č̓* 'stick together', the result is *h-ɬé·č̓* 'stand up a pitchfork, shovel, ladder, etc. in the ground'. The addition of the prefix *š-* 'by pulling' to the root *kél* 'clean' yields *š-kél* 'pull weeds out of a lawn'. The prefix *s-* 'liquid, by sucking' plus the root *yól* 'mix' yields *s-yól* 'eat bread, cookies, doughnuts, etc. and wash them down with a drink'. Not all possible combinations of prefix + root occur, some because they would be meaningless, some because there has not yet been sufficient need for them. Thus based on the root *yá·q̓* 'know' Central Pomo contains verbs *ba-yá·q̓* 'recognize by sound, obey', *da-yá·q̓* 'recognize by feeling with the hands', *ʔ-yá·q̓* 'recognize by touch (with fingers)', *pʰ-yá·q̓* 'recognize by sight', *qa-yá·q̓* 'recognize food by tasting', and *s-yá·q̓* 'recognize drink by tasting'. There are, however, no verbs **ča-yá·q̓* 'recognize by sitting', or **š-yá·q̓* 'recognize by dangling', presumably because the need for them has not arisen sufficiently often for a word to be necessary. Speakers can often describe what such combinations would mean if they did exist, but they know that they are not yet part of the language. Furthermore, not all roots that appear with instrumental prefixes occur independently, although they probably once did. Thus there is a set of verbs *da-ʔól* 'dig for' ('by pushing'), *h-ʔól* 'probe with a stick to see whether something is hiding', *ba-ʔól* 'call over to someone' ('vocally'), *ma-ʔól* 'reach for something with the foot' ('stepping'), *pʰ-ʔól* 'peek at someone' ('visually'), *p̓-ʔól* 'shake something to see whether there is dirt on it' ('encircling'), *š-ʔól* 'set fishing line, check for fish' ('dangling'), *ša-ʔól* 'dip with dipper to see whether there is any water' ('by handle'). The root *-ʔól* can be seen to mean 'summon' or 'seek', but it never occurs now without some instrumental prefix.

The instrumental prefixes on verbs are not simple alternatives to instrumental noun phrases. They may, but need not, cooccur with such noun phrases.

(2) COOCCURRENCE WITH INSTRUMENTAL NOUNS — Frances Jack, speaker

a. *Hó·wi* *mbá·č̓*
ho·=wi *m-bá·-č-ʔ*
fire=with by.internal.force-split-SEMELFACTIVE-PERFECTIVE
'It split from the heat.' (as in a gasoline explosion)

b. *ʔé·mawi* *mbá·č̓*
ʔé·ma=wi *m-bá·-č-ʔ*
frost=with by.internal.force-split-SEMELFACTIVE-PERFECTIVE
'It split from the frost.'

The instrumental prefixes are also not agreement markers or classifiers (general class labels for kinds of instruments). Different prefixes may cooccur with the same independent noun to indicate different kinds of actions.

(3) ALTERNATIVE COOCCURRENCE — Frances Jack, speaker

a. *Qʰabéwi* *čʰbá·čla.*
qʰabé=wi *čʰ-bá·-č=la*
rock=with slamming-split-SEMELFACTIVE=SPEAKER.ACTION
'I cracked it open with a rock.'

b. *Qʰabéwi* *hbá·čla*
qʰabé=wi *h-bá·-č=la*
rock=with thrusting-split-SEMELFACTIVE=SPEAKER.ACTION
'I threw a rock and hit someone.'

The numbers of instrumental affixes in different languages vary considerably, but the general composition of the sets is remarkably similar. Most languages contain affixes indicating body parts or actions involving them, particularly the hands, the feet, the mouth, often the buttocks or full body weight, and the eyes. Also typically included are natural forces such as wind, water, and fire. There are usually affixes implying instruments of certain shapes used in particular ways, especially long, stick-like instruments, sharp instruments, and compact or blunt instruments. Chimariko, for example, a language isolate of northern California, contains a relatively small set of instrumental prefixes, but the expected categories are represented: *tu-* 'with the hand', *mitci-* 'with the foot', *me-* 'with the head', *wa-* 'by sitting on', *a-* 'with a long object', *e-* 'with the end of a long object', and *tcu-* 'with a round object' (Dixon 1910: 329). Ponca, a Siouan language of Oklahoma, contains *pa-* 'by pushing', *ðí-* 'by pulling', *pi-* 'by pressing down with the hand' or 'by blowing', *ka-* 'by striking, falling, or a force of nature such as wind or water', *nq-* 'with feet or machinery', *ðа-* 'with the mouth', *na-* 'by fire', *má-* 'by cutting with a knife', *mú-* 'by inner force or by shooting' (Hahn ms).

Languages with larger inventories of instrumental affixes show the same kinds of categories. Haida, a language isolate of British Columbia and Alaska, contains a rich repertoire of such prefixes, described by Leer (1977), Levine (1977), and Hori (1996).

The characteristic blending of means and manner in their meanings can be seen in the glosses by Leer (1977: 92-4): *da-* 'by hands applied lengthwise, sidewise', *squ-* 'with hands applied endwise, by pushing', *dáŋ-* 'by pulling, dragging', *ǧál-* 'by squeezing', *sƛ'a-* 'with fingers', *xi-* 'with elbow, by elbowing', *sda-* 'with feet applied lengthwise, by kicking', *sl'a-*, *l'a-* 'with feet applied endwise, by stepping on, trampling', *qwah-* 'with the head', *xił-* 'with the neck', *kúl-* 'with the voice, by speaking', *q̓u-* 'with the teeth, by biting or chewing', *qyah-* 'with the eyes, by looking, staring', *gyú·-* 'with the ears, by hearing', *kún-* 'with the nose, by bumping with a vehicle', *qán-* 'with the chest, by bumping with the chest', *ún-* 'with the back', *ǧu-* 'with body weight, by sitting or lying on', *gí·-* 'by floating, drifting', *dá·l* 'with the tide', *xál-* 'by heat, by power boat', *sgi-* 'with stick-like object applied lengthwise, by striking with stick, chopping, clubbing', *ki-* 'with stick-like object applied endwise, by poking', *k'a-* 'by hitting with a compact object', *kus-* 'by stabbing', *q̓i-* 'by cutting', *ča-* 'by shooting', *ƛ'ú·-* 'by canoe'.

Atsugewi, a language genetically unrelated to Haida and spoken over 1000 miles away in California, shows a striking similarity in its prefix inventory. Talmy (1972: 408) lists *tu-* 'with hands, arms, touching', *ci-* 'with hands working manipulatively', *ma-* 'with the foot, leg', *pu-* 'with the mouth', *pri-* 'smelling, tasting, sucking', *wi-* 'with the teeth', *ti-* 'with the buttocks', *hi-* 'with the whole body', *uh-* 'with a long or flat object swinging, free flying, by pressure, gravity', *cu-* 'with end of a long object poking', *ra-* 'with a long object thrusting', *ra-* 'with flat object moving sidwise as raking, sawing, or rotating as driving', *ta-* 'with long object moving sidewise through liquid, as paddling, stirring', *ka-* 'with long object boring, rain', *ru-* 'with flexible long object as dragging with a cord, girding', *mi-* 'cutting with a knife', *ca-* 'blowing', *cu-* 'liquid flowing', *miw-* 'from heat or fire', *wu-* 'from light shining', *sa-* 'visually', *ka-* 'auditorily'.

Klamath, a language of Oregon, contains an even larger set of markers with similar ranges of meaning. Barker (1964: 357-9) groups together 72 'classificatory' morphemes. Many specify types of instruments and/or manners of action: *d-* 'with the hands, fingers, rubbing, kneading', *kt-* 'hitting with the fist, kicking, sliding', *p-* 'pulling', *sb-* 'pulling, dragging', *c̄-* 'with the fingers or fingernails', *y-* 'with the foot', *qb-* 'with the mouth, sucking, spitting', *qbi-* 'holding in the mouth so that one or more ends project', *gw-* 'biting', *Wal-* 'with sound, conversing', *sdig-* 'smelling', *go-* 'with the head first', *tqiq-* 'with the elbow', *ƛóč* 'with the knee', *čoq-* 'with the buttocks', *c̄ăn-* 'with the back', *sg-* 'with the penis', *wi-* 'blowing (wind)', *wič-* 'blowing (snow, storm, blizzard)', *n-* 'burning', *k-* 'with a pointed instrument (as a stick or spear)', *s-* 'with a sharp instrument, stabbing', *qd-* 'cutting', *sl-* 'with a sawlike or toothed object', *w-* 'with a long instrument, falling', *y̓o·-* 'shooting', and *n-* 'with a round instrument'.

Nez Perce, a Sahaptian language of Idaho, Oregon, and Washington, contains an especially elaborate inventory of adverbial prefixes, many of which resemble the instrumental affixes of other languages. They include *tûkʷé·p-* 'with the lower arm or hand', *tuḱe-* 'with the palm', *we·p-* 'with the hand or paw', *'îp-* 'with the fist, a blunt instrument', *nîké·-* 'with the hand, often in connection with fiber or hide', *pîti-* 'pounding, punching', *su·ye-* 'pushing', *nikté́h-* 'dragging', *wẹqi-* 'in the arms', *tulé·* 'with the foot', *tûxpíl-* 'with the leg', *hí·ti?m-* 'with the knee', *mu·-* 'with four or more legs', *him-* 'with the mouth', *ke·-* 'with the teeth', *té·-* 'by speech', *'île-* 'in talking', *mîs-* 'with the ear', *we-* 'with the eyes', *nú·xc* 'with the nose', *túkʷé·y-* 'with the forehead', *wexú·-* 'with the seat, by sitting', *cîmi-* 'by lying on', *sepé·* 'with wind, air', *tiq̓e-* 'floating in air or on water', *'îliw-* 'in fire', *'ils-* 'in burning', *cú·-* 'with a pointed object', *tî'we-* 'with a stick or pointed object', *'îptqi-* 'piercing, spearing', *túḱe-* 'with a cane-like object', *we-* 'with a chopping instrument', *'îse-* 'with a knife on one object', *'îs-* 'with a knife on plural objects', *cú·ye-* 'with an implement, by shaking', *wîstuk-* 'by shooting', *'êwîye-* 'shooting an arrow', *cẹ́w-* 'with a shell- or beadlike object', and *cu·le-* 'with a loop-like object' (Aoki 1970: 84-6).

The origins of most instrumental affixes are no longer recoverable, but in a few languages resemblances can still be perceived between them and noun or verb roots. Nichols reconstructs a set of instrumental prefixes for Proto-Numic and points to probable root sources within Proto-Numic (PN) or its parent, Proto-Uto-Aztecan (PUA) (1974: 152-86). They include **ma-* 'with the hand' (PUA *mai*, PN **moʔo* 'hand'), **ca-* 'with the hand, grasping' (PN **caʔi* 'grasp'), **ta-* 'with the foot' (PUA **tannah* 'foot'), **kɨ-* 'with the teeth' (PUA **kɨʔi* 'bite'), **mu-* 'with the nose' (PUA, PN **mupi* 'nose'), **co-* 'with the head, shoulder' (PUA **cohŋi* 'head, shoulder'), **ko-* 'top, face' (PN **koba-i* 'face'), **su-* 'with mental activity' (PUA **sunna* 'heart', **suuwa* 'believe'), **pi-* 'buttocks, back' (UA **pih* 'back'), **ku-* 'with heat' (PUA **kuh* 'fire'), **si* 'with cold' (PUA **sup* 'cold'), **ta-* 'with sun' (PN **taba* 'sun'), **wy-* 'with long object, with force' (**wɨ* 'penis'), **ci-* 'with the point of a long object' (**ci-a* 'rose'). The prefixes apparently developed from the initial roots of noun-verb and verb-verb compounds. The compounds were right-headed, consistent with the verb-final word order of the languages. Many Uto-Aztecan languages still contain noun-verb compounds formed from the incorporation of noun roots representing instruments.

Probable root sources for instrumental prefixes can be seen in Haida as well. Levine (1977: 157) cites the noun root *ƛu* 'boat' as the source of the prefix *ƛu-* 'travel by boat'. Leer (1977: 95) points to prefixes that resemble verb roots: *kyú·-* 'by tying, with rope' (*kyú·* 'tie'), *ǧu-* 'by burning' (*ǧudá·* 'burn'), *x̣i-* 'by sawing' (*x̣i* 'to saw'), *xu-* 'by blowing, by sailboat' (*xusgat* 'to blow'), *q̓ut-* 'by hunger' (*q̓ut* 'be hungry'), *qal'ú·-* 'by thirst' (*qal'ú·* 'be thirsty'), and *xwî·-* 'by cold' (*xwî·* 'be cold').

Algonquian languages contain derivational elements, termed finals, with functions quite similar to the instrumental prefixes seen so far. Many resemble existing roots in both form and meaning. In his description of Blackfoot, for example, Taylor lists *-inn-* 'with the hands' (root *-inn-* 'seize, hold in the hand'), *-oʔt-* 'with the hand' (root

-o?t- 'take'), *-Sk-* 'body motion or foot pressure' (*ISk* 'break with the foot'), *-p-* 'with mouth or teeth', *-Ss-* 'by heat or fire' (stem *-Išs-* 'burn or cook'), *-t-* 'with a blade', *-mm-* 'by cutting', and *-?t-* 'by looking, with emotion' (1969: 239).

Modern instrumental affix systems and their members show varying distances from their historical origins. Some are still evolving. Thornes notes that the Northern Paiute prefix *pa-* 'pertaining to water', cognate with the modern noun root *paa* 'water', is nearly indistinguishable formally and functionally from an incorporated noun (1996: 45). Karuk, a language isolate of northern California, shows the shadow of a system at the other extreme. Bright reports that Karuk contains no instrumental prefixes per se, but certain submorphemic elements with similar meanings recur at the beginnings of verb roots, analogous to English *sn-* in *sniff*, *snort*, and *sneeze* (1957: 86-7). These include **?ak-* 'with the hand' (*?ákiθ* 'to handle a soft mass', *?akrap* 'to slap', *?aktuv* 'to pluck at', *?akxárap* 'to scratch'), **θim-* 'by rubbing' (*θimkutíkuti* 'to rub smooth', *θimyúriš* 'to make fire with a fire drill'), **pa-* 'with the mouth' (*páčup* 'to kiss', *pačnut* 'to suck on', *pápuθ* 'to chew', *pasnik* 'to blow a whistle'), **im-* 'involving fire or heat' (*imčak* 'to get burnt', *imčax* 'to be hot', *impuk* 'to be warm', *imtup* 'to be cooked'), **ta-* 'with an implement' (*tásir* 'to brush', *tátuy* 'to sweep', *taxvav* 'to stir soup', *taxvuk* 'to hook'), **imθa-* 'with a striking implement' (*imθanúvnuv* 'to drum', *imšátif* 'to bat', *imšá·tva* 'to play shinny'), and **vu-* 'with a cutting implement' (*vúpak* 'to trim', *vúxič* 'to saw', *vútupiš* 'to cut up fish').

Over time, the meanings of such affixes can evolve as well. They can develop more specific meanings by association with particular uses, like the Haida *xu-* 'by blowing, by sailboat'. More often they become more abstract. According to Nichols' reconstruction, for example, the Numic noun **ci-a* 'rose', perhaps built on a term for 'thorn', has developed into a prefix *ci-* 'with a sharp, pointed object, action with the end of a long object' (Thornes 1996: 44). In both Numic and Haida, instrumental prefixes indicating hand action have evolved into general causatives.

(4) THE EVOLUTION OF INSTRUMENTAL PREFIXES TO GENERAL CAUSATIVES

a. YAHOOSKIN-NORTHERN PAIUTE — Thornes 1996: 62

ssi?a	*ma-ssi?a-o*
be.afraid	by.hand-be.afraid-PUNCTUAL
'to be afraid'	'to frighten (someone)'

b. HAIDA — Hori 1997ms

x̌ən?way	*x̌inda-ka*	*la·=?u·* *x̌ən?way*	*xə-x̌inda-kən*
milk	warm-NONPAST	3AGT=FOC milk	by.hand-warm-PAST
'The milk is warm.'		'He warmed the milk.'	

In many languages instrumental affixes form a cohesive set, clearly identifiable from their meanings and position within the word. In Central Pomo they are the only prefixes. Haida has both instrumental prefixes and prefixes implying a particular shape, configuration, or consistency on the part of an involved participant (discussed in section 3.4). The two prefix sets appear in different positions within the verbal morphology and may cooccur.

(5) HAIDA SHAPE + INSTRUMENTAL PREFIX — Levine 1977: 157

ǧuday	*ła*	*dac̓isdalgʌŋ*
ǧuda-gay	*ła*	*da-c̓is-dal-gʌŋ*
box-the	I	by.pushing-rigid.open.container-cont.horizontal.movement-it

'I'm pushing the box.'

In other languages, however, the two types of affixes are not as differentiated. Some of the instrumental prefixes in Klamath were seen on page 122. Within the same set of prefixes are other markers indicating the shape/consistency/configuration of objects acted upon, distinguishing for example action on a long object (*?v-*), on multiple objects (*?i-*), on a hide or skin (*b-*), on a handful of granular objects such as sand, grain, or beads (*c̓a-*), on a massive shapeless object like meat (*c̓ᵉ-*), on a slender vertical object like a pole or stick (*d-*), on a mass of string or ropelike objects (*km-*), on a living object such as a baby or animal (*ks-*), on a flat object (*nᵉ-*), on a heavy or pronged object such as a chair or fishtrap (*qa-*), on a bunch of objects such as grapes (*sči-*), on a clothlike object (*sl-*), and on liquid in a container, such as water in a bucket or pus in a sore (*c̓i-*). The distinction is in fact not always sharp for individual markers, such as *n-* 'act with a round instrument, act upon a round object'.

In Diegueño, a Yuman language of southern California, the distinction is even less pronounced. Langdon (1970: 80-4) lists a few prefixes with the kinds of meanings usually associated with instrumental affixes: *cu··-* 'with the mouth' (*cu··-kaṭ* 'to bite off', *cu··-ya·y* 'to hum', *cu··-kʷaṛ* 'to preach, brag') and *p-* 'by pressure' (*p-ənʸa·* 'to press, rub with hand', *p-əmił* 'to carry, like a bucket', *p-əxʷim* 'to grab and miss', *p-əsi·* 'to milk'). Many others cover both the functions usually associated with instrumental prefixes and those associated with shape. The prefix *a·-* is translated 'action performed on or by means of one long object or a large, hard, or sharp object, including people'. It appears in such verbs as *a·-ap* 'lay down a long object', *a·-kaṭ* 'cut with a knife', *a·-naṛ* 'lower a long object, drown', *a·-małʸ* 'to sweep', *a··naṛ* 'to cover over a long object, to bury a person', and *a·-xʷił* 'put someone in jail'. The prefix *c-* 'specifies an action performed on or by means of an indefinitely large number (a bunch) of small objects (also objects soft in consistency, pliable, or liquids) ... The emphasis is on an aggregate, a mass, rather than on individual items.' Verbs

containing the prefix include *ç-apiɬ* 'cover a bunch', *ç-ayum* 'spread a sheet', *ç-ək^{w}i·* 'to lasso', *ç-ax^{w}iɬ* 'put several in jail' and others.

In some languages instrumental affixes pattern with an even wider variety of adverbial markers, confirming their basic function as adverbial rather than referential or concordial. In the same prefix set as the Nez Perce instrumental prefixes listed earlier are *té·w-* 'at night', *tisqiʔ* 'backwards', *tiyé·* 'against, obstructively', *tuk^{w}ele-* 'hurriedly', *we·-* 'swiftly, flying', *wé·tx* 'loudly, in anger', *ʔîliwsteq̓e* 'face down', *cu-* 'underneath', *cú·-* 'in single file', *sike-* 'in the distance', and *têqe-* 'suddenly, tentatively'.

This fluidity of grammatical classes is not altogether surprising in light of the diachronic origins of the affixes. Part of the usual process of grammaticalization, as elements evolve from roots to affixes, is a loss in categoriality. When noun or verb roots are compounded, those that are not heads lose their status as arguments or predicates, and become general modifiers of their heads.

What is striking about the instrumental affix systems that appear in so many genetically unrelated languages is their similarity. Though they differ in the size of their inventories, they encode the same kinds of meanings: action with the hands (grasping, slapping, punching, pulling, pushing), with the feet (kicking, stepping), with the mouth (biting, talking), with the buttocks or body weight (sitting), natural forces (wind blowing, liquid flowing, heat, spontaneous events), and actions with certain kinds of instruments, especially long ones (poking, swinging), compact ones, and sharp ones (cutting, sawing). All show similar decategorization, whether they are descended from noun or verb roots. Rather than referring to specific instruments in the way nouns might, or specific acts in the way verbs might, their meanings range across kinds of means and manners. They are not substitutes for independent, referential, instrumental noun phrases, though they may imply the involvement of types of instruments; they characterize events and states.

They are also similar in their formal properties. They are derivational, used to create new verbs for new situations. Like other derivational devices, they vary in productivity and transparency, as do the roots with which they appear; most of the languages contain some verb roots that never occur without the such affixes. As word-formation devices, they are often used in unpredictable ways, but they also yield a fascinating, systematic partitioning of the lexicon, in which situations are formally classified according to the means and manner underlying them.

3.6 Control

Systematic distinctions found in several families in North America center around the notion of control over events and states. They appear in various areas of language structure, including the lexicon, verbal morphology, and nominal or pronominal case. The first two are discussed in the following sections, and the third in 4.2 on case.

3.6.1 *The lexicon*

The Athabaskan languages are known for certain fine semantic distinctions made in the lexicon. Rushforth & Tatti (in an unpublished 1980 presentation) and Rice (1989) have described an interesting distinction reflected in the inventories of verb roots: the degree of control exerted by agents over their actions. One set of verb roots is used for actions entirely controlled by an agent, and another for actions initiated by an agent but not necessarily controlled throughout their full duration. Rushforth & Tatti characterize the control verbs (which they term *séodi̱t'é*) as careful, controlled, respectful, polite, humble, reserved, gentle, and concerned with human behavior. Non-control verbs, labelled *séodi̱t'é íle*, are characterized by a lack of care, reservation, and control, though they are not necessarily negative in connotation. Rice provides good examples of the contrast from Slave (1989: 783-7), noting that there are many more. The contrasting roots are final in the verbs below. The first member of each pair contains a control verb.

(1) Control and non-control verb roots in Slave — Rice 1989: 783-9

gohkwı̨ sghánı̨ʔǫ	's/he gave me the axe to keep'	(*gohkwı̨* 'axe')
gohkwı̨ seghá́yę́chú	's/he handed me the axe'	
ts'éré ʔónédéla	's/he gave away the blankets'	(*ts'éré* 'blanket')
ts'éré ʔónédéwa	's/he threw away, got rid of the blankets'	
nǫ́hbali ts'elíyihshú	'I left the tent far off (deliberately)'	(*nǫ́hbali* 'tent')
nǫ́hbali ts'elíyiʔa	'I lost the tent'	
tu seghánı̨káh	'you (SG) give me a glass of water (politely)'	(*tu* 'water')
tu seghánı̨hge	'you (SG) give me a glass of water (quickly)'	
líbarí táʔedédahta	'I rolled the barrel down, guiding it'	(*líbarí* 'barrel')
líbarí táʔedédehxene	'I rolled the barrel down, not guiding it (roughly)'	
k'̨nadah	's/he walks around slowly, taking time'	
k'̨natleh	's/he walks around, not stopping, quickly'	

3.6.2 *Verb morphology*

Some of the most pervasive and interesting control distinctions are found in languages of the Salishan family in the Pacific Northwest, first identified and analyzed in depth by Thompson (1979c, 1985). The grammatical markers distinguishing control have not always been easy to recognize, since their effects often fail to surface in English glosses. Furthermore, though the distinction appears to be reconstructible for Proto-Salishan, the modern languages show substantial differences in the forms, meanings, transparency, and productivity of the markers. Perhaps for these reasons, the constructions in question have not always been described in terms of control.

The distinction appears most clearly with markers of transitivity. Transitivity constitutes a fundamental element of Salishan grammar; all transitive stems carry overt transitive affixes, which may then be detransitivized through the addition of further suffixes such as passives. Thompson (1979) provides examples of two transitive suffixes from Lushootseed, spoken in the area around Seattle: *-d* and *-dx*^{w}.

(2) LUSHOOTSEED TRANSITIVE SUFFIXES — Thompson 1979: 156

ʔuƛ̓ci-d	*čəd*	'I cut it (on purpose)'
ʔuƛ̓č-dx^{w}	*čəd*	'I cut it (accidentally)'
ʔupúsu-d	*čəd*	'I threw something and hit him (intentionally)'
ʔupús-dx^{w}	*čəd*	'I threw something and hit him (accidentally)'

He notes that the difference between the two suffixes had been identified variously as accidental/non-accidental, intentional/unintentional, or voluntary/involuntary. At one point, however, a speaker provided an interesting gloss for the last sentence above: 'I was throwing something or shooting and hit the target.' Hitting a target under such circumstances would hardly be accidental, unintentional, or involuntary. After further work it became clear that the transitivizer (*-dx*^{w}) also often carries meanings such as 'with difficulty', 'finally managed to', and 'in spite of obstacles'. Thompson concludes that the thread uniting these glosses is limited control on the part of the agent, who may be responsible but is not in full control of the situation.

Further contrasts in control within the transitivity morphology have been described for a number of other Salishan languages. In some cases the control feature is analyzed as inherent in the transitivity suffixes themselves, while in others it is assigned to suffixes adjacent to the transitivity suffixes. In his analysis of Upriver Halkomelem, Galloway (1993) identifies six control suffixes that serve as the only transitivizers in the language. One of the six must occur on every transitive verb. The suffixes are listed (3), and examples of their meanings in specific verbs can be seen in (4).

(3) HALKOMELEM CONTROL/TRANSITIVITY SUFFIXES — Galloway 1993: 244

-(ə)T/-á·T/-ɛ·T	'do purposely to someone or something'
-l	'do accidentally, happen to, manage to, to someone or something'
-sT	'cause it or someone to, make someone or something do'
-(ə)x^{y}	'do purposely to something (especially inanimate) or someone'
-məT	'happen' (with little control) to without directly affecting one'
-(ə)ləs	'(accidentally, happen to, manage to) to someone or something'

(4) HALKOMELEM CONTROL/TRANSITIVITY IN VERBS — Galloway 1993: 244-9

ɬás	'get hit by something moving, bumped, mashed'
ɬás-əɬ	'mash something (berries, etc.)'
ʔiḵ^{w}	'lost'
ʔáḵ^{w}*-l-əx*^{w}	'lose something'
ʔówə	'be not, not be, no'
ʔówe-st-əx^{w}	'deny something'
məmé	'it came off (a button, etc.)'
məmé-x^{y}	'separate or split up people fighting'
ʔə́liyə	'dream'
ʔə́liyə-məɬ	'dream of someone'
sƛ̓í·	'want, desire'
ƛ̓í··ls-áx^{y}*əs*	'he loves or likes me'

The control distinction can be seen outside of the transitivity system as well. Carlson & Thompson (1982) identify a reduplicative suffix that serves as a marker of emphatic noncontrol in Spokane and Thompson. Kinkade (1982) shows that a cognate suffix in Columbian carries the same function. A survey of other Salishan languages by Carlson & Thompson indicates that the suffix can be traced to Proto-Salish. It consists of a copy of the first vowel and second consonant of the root (-V_1C_2) immediately suffixed to the root. (The vowel does not always surface.) Forms derived with this marker generally fall into several semantic groups. The first example given in each group in (5) is from Spokane, and the second is from the Thompson River language.

3.6.2 *Verb morphology*

Some of the most pervasive and interesting control distinctions are found in languages of the Salishan family in the Pacific Northwest, first identified and analyzed in depth by Thompson (1979c, 1985). The grammatical markers distinguishing control have not always been easy to recognize, since their effects often fail to surface in English glosses. Furthermore, though the distinction appears to be reconstructible for Proto-Salishan, the modern languages show substantial differences in the forms, meanings, transparency, and productivity of the markers. Perhaps for these reasons, the constructions in question have not always been described in terms of control.

The distinction appears most clearly with markers of transitivity. Transitivity constitutes a fundamental element of Salishan grammar; all transitive stems carry overt transitive affixes, which may then be detransitivized through the addition of further suffixes such as passives. Thompson (1979) provides examples of two transitive suffixes from Lushootseed, spoken in the area around Seattle: *-d* and *-dx*^{w}.

(2) LUSHOOTSEED TRANSITIVE SUFFIXES — Thompson 1979: 156

ʔuɬíc̓i-d	*čəd*	'I cut it (on purpose)'
ʔuɬíc̓-dx^{w}	*čəd*	'I cut it (accidentally)'
ʔupúsu-d	*čəd*	'I threw something and hit him (intentionally)'
ʔupús-dx^{w}	*čəd*	'I threw something and hit him (accidentally)'

He notes that the difference between the two suffixes had been identified variously as accidental/non-accidental, intentional/unintentional, or voluntary/involuntary. At one point, however, a speaker provided an interesting gloss for the last sentence above: 'I was throwing something or shooting and hit the target.' Hitting a target under such circumstances would hardly be accidental, unintentional, or involuntary. After further work it became clear that the transitivizer (*-dx*^{w}) also often carries meanings such as 'with difficulty', 'finally managed to', and 'in spite of obstacles'. Thompson concludes that the thread uniting these glosses is limited control on the part of the agent, who may be responsible but is not in full control of the situation.

Further contrasts in control within the transitivity morphology have been described for a number of other Salishan languages. In some cases the control feature is analyzed as inherent in the transitivity suffixes themselves, while in others it is assigned to suffixes adjacent to the transitivity suffixes. In his analysis of Upriver Halkomelem, Galloway (1993) identifies six control suffixes that serve as the only transitivizers in the language. One of the six must occur on every transitive verb. The suffixes are listed (3), and examples of their meanings in specific verbs can be seen in (4).

(3) HALKOMELEM CONTROL/TRANSITIVITY SUFFIXES — Galloway 1993: 244

-(ə)T/-á·T/-ɛ·T	'do purposely to someone or something'
-l	'do accidentally, happen to, manage to, to someone or something'
-sT	'cause it or someone to, make someone or something do'
-(ə)x^{y}	'do purposely to something (especially inanimate) or someone'
-məT	'happen' (with little control) to without directly affecting one'
-(ə)ləs	'(accidentally, happen to, manage to) to someone or something'

(4) HALKOMELEM CONTROL/TRANSITIVITY IN VERBS — Galloway 1993: 244-9

tás	'get hit by something moving, bumped, mashed'
tás-ət	'mash something (berries, etc.)'
ʔiḵ^{w}	'lost'
ʔáḵ^{w}*-l-əx*^{w}	'lose something'
ʔówə	'be not, not be, no'
ʔówe-st-əx^{w}	'deny something'
məmɛ́	'it came off (a button, etc.)'
məmɛ́-x^{y}	'separate or split up people fighting'
ʔə́liyə	'dream'
ʔə́liyə-mət	'dream of someone'
sƛ̓í·	'want, desire'
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(5) SEMANTIC CATEGORIES OF OUT-OF-CONTROL REDUPLICATION Carlson & Thompson 1982

1.	Accidents			
S	*kʷél-l-c*	'it tipped over by accident'	(*kʷélc*	'inverted')
T	*péy-iʔ*	'(container) upset, contents spread around'	(*péy*	'spread to dry')
2.	Spontaneous occurrences			
S	*qc-íc*	'it got tangled up (thread when sewing)'	(*qíc*	'braided')
T	*síp-əp*	'branch bends down (heavy with fruit)'	(*sípes*	'he bends branch down')
3.	Natural phenomena			
S	*ml-íl*	'it bled'	(*míl*	'flow)
T	*qʷúy-iʔ*	'it gets cloudly'	(*qʷúy*	'it's cloudy')
4.	Lack of control			
S	*qʷáw-u*	'drunk'	(*qʷáw*	'silly, crazy')
T	*mán-n-x*	'get sick from smoking'	(*ménix*	'smoke')
5.	Acts of others (protagonist not in control)			
S	*méx̌-x̌*	'(cards) have been dealt'	(*méx̌*	'mixed')
T	*kíc-əc kt*	'we had unexpected visitors'	(*kícetm*	'we go visit')
6.	Effort and patience			
S	*qíy-i*	'finally it got to look like a house'	(*qíy*	'it's a home')
T	*lém-m*	'(hitch-hiker) finally gets a ride'	(*lémix*	'he boards')

Thompson (1985) has proposed a systematic account of the control system. All Thompson River morphemes can be categorized according to their control values: unmarked for control, marked for control [+CTL], or marked for limited control [-CTL]. Of the over 1800 roots he identified in the language, only a few are neutral (*tmíxʷ* 'earth', *mús* 'four'), about 50 are control (*táx* 'paddle'), and the rest are limited control (*łyúkʷ* 'bump/be bumped'). Most affixes are unmarked for control: they do not change the control status of the stem. Some are [+CTL], shifting the status of the stems they follow to [+CTL], such as the autonomous *-íyx/-ix* for independent action.

(6) THOMPSON [+CONTROL] SUFFIX Thompson 1985: 401

yáx-ix	*kn*
gap-AUTONOMOUS	1SG.SUBJ
[-CTL]-[+CTL]	
'I made myself a path through'	

mél-ix	*kn*
rest-AUTONOMOUS	1SG.SUBJ
[-CTL]-[+CTL]	
'I took a rest'	

Others are [-CTL], shifting stems to limited control, like the emphatic out-of-control.

(7) THOMPSON [-CONTROL] SUFFIX Thompson 1985: 402

nés-əs	*kn*
go-OUT.OF.CONTROL	1SG.SUBJ
[+CTL]-[-CTL]	
'I manage to go (to a place)'	

nóx̌ʷ-ox̌ʷ	
run-OUT.OF.CONTROL	
[+CTL]-[-CTL]	
'(animal) is forced to run'	

Control status may be shifted back and forth with layers of affixation. The root *xex̌* 'skim' is basically [-CTL], but the autonomous suffix *-ix* derives a new [+CTL] stem: *xéx̌ix* 'get out of water or a canoe or vehicle'. The [-CTL] middle *-nwéln* yields [-CTL].

(8) THOMPSON LAYERS Thompson 1985: 411

xex̌-ix-nwéln	*kt*
skim-AUTONOMOUS-NONCONTROL.MIDDLE	1PL.SUBJECT
[-CTL]-[+CTL]-[-CTL]	
'We're desperate to get out of the canoe.'	(limited control)

Hierarchies of dominance can be seen among morphemes. The control status of stronger morphemes overrides that of weaker ones. The autonomous suffix *-ix* cited earlier is not only [+CTL] but strongly so, or dominant. It overrides the [-CTL] value of the roots 'gap' and 'rest', whose limited control value is low in dominance. The strong control value of the autonomous suffix prevails, and the resulting stem is [+CTL]. Suffixes are not always dominant, however. The [-CTL] root 'vomit' has a stronger control value than the [+CTL] middle suffix *-m*. The derived stem is [-CTL].

(9) THOMPSON DOMINANCE Thompson 1985: 413

xʷúc-m	*kn*
vomit-MIDDLE	1SG.SUBJECT
[-CTL]-[+CTL]	
'I vomited violently.'	(limited control)

Further discussion of Salish control morphology is in Thompson & Thompson 1971 on Klallam and 1981, 1992, 1996 on Thompson; Carlson 1972a, 1996 on Spokane; Beaumont 1977 on Sechelt; Galloway 1978, 1993 on Upriver Halkomelem; Mattina 1978, 1993 on Colville; Davis & Saunders 1980b and Saunders & Davis 1982 on Bella Coola; Montler 1986 on Saanich; Kroeber 1988 and Watanabe 1996 on Comox and others; Hess 1990 and Miller & Hilbert 1993 on Lushootseed and others; and van Eijk 1991b and Demirdache 1996b on St'át'imcets (Lillooet).

3.7 Space: location and direction

Distinctions pertaining to space appear in several areas of grammar. Languages of North America, like most others, typically contain a variety of adverbial particles indicating location or direction, such as that in (1) from Wikchamni of California.

(1) WIKCHAMNI YOKUTS LOCATIVE ADVERBIAL — Gamble 1978: 132

ʔan	*pahathay*	*munaw*	*ṭe·matim*	*tʰoyono-w.*
their	parents	outside	throw	night-at

'Their parents throw them outside at night.'

Spatial distinctions are also marked on demonstratives, adpositions, case affixes on nouns, and adverbial affixes on verbs. Many of the distinctions found in North American languages reflect universal categories of human experience and are common cross-linguistically. In a number of languages, particularly in the Northwest and the North, spatial distinctions are elaborately developed. In some they clearly reflect the topographic contexts in which the languages are spoken.

3.7.1 *Demonstratives*

Demonstratives may function as pronouns (*that*), as determiners (*that man*), and as adverbs (*there*). They typically distinguish relative distance from the speaker. Many languages show a simple two- or three-way distinction. A number indicate finer gradations of distance and specify other features as well. In Blackfoot, an Algonquian language of Montana and Alberta, demonstratives distinguish distance relative to both speaker and addressee, and familiarity.

(2) BLACKFOOT DEMONSTRATIVES — Frantz 1991: 62

amo	proximity to speaker but not to addressee
om	proximity to neither speaker nor addressee
anno	proximity to the speaker and proximity or familiarity to the addressee
ann	proximity or familiarity to the addressee but no proximity to the speaker
am	proximity and familiarity to the speaker

Suffixes can be added to distinguish visibility, reference point, and motion.

(3) BLACKFOOT SUFFIXES FOR DEMONSTRATIVES — Frantz 1991: 65

-hka	not visible to the speaker
-ka	distance is relative to another time than that of the speech act
-ma	stationary
-ya	moving but not toward the speaker

Anná	*annáhka*	*kánnahka?*
ann-wa	*ann-wa-hka*	*k-ínn-wa-hka*
where-3SG	that.familiar.to.you-3SG-INVISIBLE	2-father-3SG-INVISIBLE

'Where is your [familiar to you but invisible] father?'

ámoksika	*isttsúiksinai'kokaiksika*
amo-ksi-ka	*isttsúiksina-i'kokaa-iksi-ka*
this.near.speaker-3PL-OTHER.TIME	snake-paint.lodge-3PL-OTHER.TIME

'those [here at another time] who used snake-painted lodges here'

The Blackfoot demonstratives can thus indicate both concrete and abstract proximity, that is, relative physical location and mental familiarity.

The features distinguished by Blackfoot demonstratives are strikingly similar to those found in languages of the Wakashan, Salishan, and Chimakuan families on the Northwest coast. Demonstratives in Heiltsuk for example, a Northern Wakashan language of British Columbia, contain suffixes that distinguish the proximity of a referent to the speaker and hearer, its visibility, and its presence or absence.

(4) HEILTSUK DEMONSTRATIVES — Rath 1981: 75-91

gáqʷ	'this here with me'
gácqʷ	'this here with me, invisible'
qúqʷ	'this here with you, that there with you, concerning you'
quχʷcqʷ	'this here with you, that there with you, invisible'
qíqʷ	'this one under discussion, that one over there near neither you nor me'
qícqʷ	'this invisible one under discussion, that invisible one over there'
qkiqʷ	'that one absent'

Salishan languages show similar distinctions. In Upriver Halkomelem, a coast Salish language of British Columbia, demonstrative articles distinguish presence, proximity, and visibility, in addition to gender and number (Galloway 1993: 385-404). Thus *tə* is used for a (non-feminine) person or object that is present and visible, *kʷθə* for one near but not visible, and *k̓ʷə* for one either remote and not visible, or past, deceased, abstract, hypothetical, generic, or indefinite. The relative distances they mark may be physical and concrete (remote, invisible), or abstract (past, deceased, hypothetical, generic). The demonstrative articles appear with most kinds of nominals, including demonstrative pronouns and possessed nouns: *təwét tə ʔí·lə* 'Who owns this (present.visible) one?'; *skʷətéxʷ kʷθəl mè·l* '(This.near.not.visible) my father is inside'; *lí qə́x k̓ʷə siyát lí k̓ʷə léləm* 'Is there a lot of (distant.not.visible) wood at your (distant.not.visible) house?'

In Quileute, a Chimakuan language spoken on the northwest coast of Washington, demonstratives distinguish position relative to the speaker and addressee, visibility, and relation to previous experience (in addition to gender). The non-feminine forms are *yúx·o* visible near speaker, *yíča* visible near addressee, *sá?a* visible near both, *ha* visible but removed from both, *či?* invisible but known, *xwa?* invisible and unknown but related to experience (immediate experience, hearsay, linguistic context, or general knowledge), and *x*^{w} invisible, unknown, and unrelated to experience (Andrade 1933: 246-52).

(5) QUILEUTE DEMONSTRATIVES — Andrade 1933: 251

či?	*hel·osi*	*ɬoq*^{w}	*lotóli*
that.invisible.known	that.in.which.we.traveled	we.customarily	cross.body.of.water

'the [invisible but known] canoe in which we used to go across'

liweli·?ilo	*sá?a*	*á·sayát*	*ičási*	*kci?*	*tsítskwá?as*
we.shall.take	that.present	meat	take.there	that.fem.absent.known	daughter's

'We shall take that meat [in canoe between speaker and hearer] to my daughter.'

Especially elaborate demonstrative systems can be found in the Eskimoan languages, described in Gagné 1968, Denny 1982, and Jacobson 1984b,c, 1995, and elsewhere. Related forms are used for demonstrative pronouns, which locate objects ('this one'), and demonstrative adverbs, which locate places ('here'). Jacobson lists the features underlying the Central Alaskan Yup'ik system as: orientation with respect to the speaker (I-V), relative proximity or accessibility to the speaker (a/b), and status of the object as extended, restricted, or obscured (not visible).

(6) CENTRAL ALASKAN YUP'IK DEMONSTRATIVE PRONOUNS — Jacobson 1984b: 654

		EXTENDED	RESTRICTED	OBSCURED	
I	a	*man'a*	*una*	---	'near speaker'
	b	*tamana*	*tauna*	---	'near listener'
II	a	*augna*	*ingna*	*anma*	'over'
	b	*agna*	*ikna*	*akemna*	'across'
III	a	*quagna*	*kiugna*	*qamna*	'inside, upriver'
	b	*qagna*	*keggna*	*qakemna*	'outside'
IV	a	*un'a*	*kan'a*	*camna*	'down below, downslope'
	b	*unegna*	*ugna*	*cakemna*	'downriver, toward exit'
V	a	*paugna*	*pingna*	*pamna*	'upslope'
	b	*pagna*	*pikna*	*pakemna*	'up above'

Additional demonstratives include *ukna/ukani* 'the one coming/toward here' and *imna* 'the aforementioned one'.

The extended/restricted/obscured distinction is of special interest. Jacobson (1984b: 653) describes it as follows. Extended forms 'refer to an entity or area that is in sight and that is extended to some length, moving from one place to another, or of broad expanse. The extended demonstratives may be characterized as those which refer to an entity or area which requires more than a single glance to be seen.' Restricted forms 'refer to an entity or area that is in sight and that is restricted in size and is not in motion (or whose motion is confined to a restricted area). In other words, restricted demonstratives are those which refer to an entity or area which may be seen fully in a single glance.' Obscured demonstratives 'refer to an entity or area that is not in sight, or not clearly perceptible'.

Denny 1982 provides a detailed discussion of a similar system in Inuktitut. An object is generally classified as extended if it is at least five times as large in one or two dimensions as in the others, such as a harpoon or blanket, but as restricted if it is roughly equidimensional, such as a ball or box. Humans and animals like bears or dogs are taller or longer than they are wide, but not sufficiently so to be classified as extended. Objects must be of a certain size to be extended, so that pencils, needles, scissors, or small towels are usually classified as restricted, though sleds, poles, water pipes, airplanes, boats, long tables, hoses, boards, ladders, brooms, walls, and big, square rugs are typically extended. Objects usually classified as restricted on the basis of their intrinsic shape may be classed as extended due to their temporary configuration or motion. Thus three intrinsically restricted dogs would be classified as extended if spread out in space. A rope may be classified as restricted when coiled but extended when stretched out. A single mitten or boot may be extended if it is spatially distant from its mate. A hockey player skating along may be classified as extended because of his trajectory. As Denny notes, there is again a lower limit on the extended classification: 'the slow movements of a caribou grazing are not sufficient for it to be classified as extended' (1982: 367). An additional distinction in the Inuktitut system is marked by the prefix *ta-*. It marks a shift in the deictic reference point away from the speaker's current location. This other field may be the sphere of the addressee or a third person, or of the speaker at another time.

Further distinctions of location and direction are made in the Eskimoan languages by case suffixes on the demonstratives. The Yup'ik demonstratives in (6) above are in their unmarked absolutive forms, but they may be marked with the locative case suffix to indicate position (*mat'u-mi* 'at this one'), the allative for goal (*mat'u-mun* 'to this one'), the ablative for source (*mat'u-mek* 'from this one'), or the vialis for path (*mat'u-kun* 'through this one'). The pronominal demonstratives may be used alone as nominals or as appositives to nouns.

(7) YUP'IK DEMONSTRATIVES AS PRONOUNS AND APPOSITIVES — Elena Charles, speaker

Kiikii ikna	*tuntuvi-ik tau-kuk*
hurry that.RESTRICTED.ACROSS	moose-DU that.VISIBLE.NEAR.HEARER-DU
'Hurry, you over there!'	'those two moose there'

Demonstratives can be seen in context in the passage in (8) from a discussion of how to transport a moose that had been killed a distance away from the boat.

(8) YUP'IK DEMONSTRATIVES IN USE — Elena Charles, speaker

man'a	*qaugyauguq*
man'a	*qaugyar-u-gu-q*
this.extended near.speaker	sand-be-INDICATIVE.INTRANSITIVE-3SG
'This area is sandy.	

tua-i	*una*	*kemek*
tuai	*una*	*kemeg*
so	this.restricted.near.speaker	meat
In this meat,		

ukinerluku	*akikeqellriignek.*
uki-ner-ir-lu-ku	*aki-ke-qellriik-nek*
have.hole-result-make-SUBORDINATIVE-R/3SG	opposite-have.as-counterpart-ABL
make holes side by side. . . .	

Ingna-ll	*tauna*	*murak*
ingna=llu	*tauna*	*murag*
that.restricted.over.there=too	that.restricted.near.addressee	wood
And that wood over there,		

kepluku	*ikaggun-llu*
kepe-lu-ku	*ika-ggun=llu*
cut-SUBORDINATIVE-R/3SG	there.restricted.across-through=too
cut through that over there too,	

uukun-llu,	*uukun-llu.*
uu-kun=llu,	*uu-kun=llu.*
this.restricted.near.speaker-through=too	this.restricted.near.speaker-through=too
and through this here, and through this here, too.'	

3.7.2 *Nominal adpositions, clitics, and affixes*

Location and direction may be specified with respect to a reference point by means of adpositions (prepositions or postpositions), clitics, or affixes attached to nominals.

Locative particles serving as adpositions are common. The particle *yelti* 'behind' functions as a postposition in example (9) below from Wintu, a California language.

(9) WINTU LOCATIVE PARTICLE — Shepherd 1989: 117

qewel	*yelti*	*łaqalas*	*paqto·n*	*nequma*
house	behind	playing	bone	find

'Playing behind the house, they found bones.'

Locative enclitics can be seen in Comanche, a Uto-Aztecan language of Oklahoma. They are attached to the preceding word like suffixes, but they occur with three kinds of words: nouns, pronouns, and demonstratives. Their forms vary with context.

(10) COMANCHE LOCATIVE ENCLITICS — Charney 1993: 95-111

=pa?a	'on, above, over'	*=tuhka*	'under'
=kupa	'in'	*=kimaru*	'by, beside, near'
=ka(htu)	'at, to, toward'	*=ku*	'there, to, at, from'
=pehti	'to, toward'		

yitsi?etipa?a	*nikwi*	*Dallaskahtu*	*mi?arikwi:*
yitsi?-eti=pa?a	*nikwih*	*Dallas=kahtu*	*mi?a-tikwih*
fly-NOM=on	EXCL.DU	Dallas=to	go-GENERIC.ASPECT.DUAL

'We're going to Dallas on a plane.'

hinituhka	*suri*
hini=tuhka	*suti*
what=under	that.one

'What is he under?'

Kaawosa	*marikimaru*	*mi?aiyu*
Kaawosa	*matii=kimatu*	*mi?a-yu*
Kaawosa	them=beside	go-PROGRESSIVE

'Kaawosa going, walking by them.'

The same kinds of functions can be served by case suffixes on nouns. As noted above, Yup'ik has four cases that mark location and direction. Each can be combined with dual and plural number, and possessive pronominal suffixes.

(11) YUP'IK CASE SUFFIXES FOR LOCATION AND DIRECTION

-mi	LOCATIVE	'location at, in, on'	*-mun*	ALLATIVE	'motion to, toward'
-mek	ABLATIVE	'motion from'	*-kun*	VIALIS	'motion through'

Examples of their use are in (12) and (13).

(12) YUP'IK CASE SUFFIXES IN CONTEXT — George Charles, speaker

a. *paluqtamek*	*tangerrrlinilria*	*kuimalriamek*	*kuigmi*
paluqtar-mek	*tangerrr-llini-lria*	*kuimar-lria-mek*	*kuig-mi*
beaver-ABL	see-apparently-PARTICIPIAL	swim-NOMINALIZER-ABL	river-LOCATIVE
'he saw a beaver swimming in the river'			

b. *kuigkun*	*kuimareluni*	
kuig-kun	*kuim-ar-lu-ni*	
river-VIALIS	swim-1-SUBORDINATIVE-3SG	
'he swam across the river'		

(13) YUP'IK CASE SUFFIXES - IN CONTEXT — Elizabeth Ali, speaker

a. *uitarqellriik,*	*encuarmi*	
uita-rqe-llri-ik	*ene-cuar-mi*	
stay-habitually-PARTICIPAL-DU	house-small-LOCATIVE	
'they were living together in a small house'		

b. *aqumtullruuq*		*estuulumi*
aqume-tu-llru-u-q		*estuulur-mi*
sit-customarily-PAST-3 INDICATIVE.INTRANSITIVE-3SG		table-LOCATIVE
'he would sit at the table'		

c. *Kusquqvamun*	*ayagluni*	
Kusquqvag-mun	*ayag-lu-ni*	
Kuskokwim.River-ALLATIVE	go-SUBORDINATIVE-3SG	
he went towards the Kuskokwim River'		

d. *napamek*	*catrarluni*	
napa-mek	*catrar-lu-ni*	
tree-ABLATIVE	descend-SUBORDINATIVE-3SG	
'he climbed down from the tree'		

The Yup'ik system is further expanded by the use of nouns indicating areas relative to an object. That object is then identified as the possessor of the area. (Possession is indicated by an ergative case suffix on the possessor noun, and a pronominal suffix referring to the possessor and possessed on the possessed noun.)

(14) YUP'IK AREAL NOUNS WITH CASE — George Charles, speaker

tangerrliniuq	*kuigem*	*akiani*
tangerr-llini-u-q	*kuig-m*	*aki-a-ni*
see-apparently-INDICATIVE.INTR-3SG	river-ERGATIVE	other.side-3SG/3SG-LOCATIVE
he saw (something)	the river's	on its other side
'he saw (something) on the other side of the river'		

3.7.3 *Verbal clitics and affixes*

Many languages show a simple distinction between direction toward the speaker or other reference point (sometimes called a cislocative), versus direction away (called a translocative). A cislocative/translocative distinction can be seen in Mohawk, an Iroquoian language of Quebec, Ontario, and New York State. A speaker inside a house or room would use the form on the left, while a speaker outside would use the form on the right.

(15) MOHAWK CISLOCATIVE AND TRANSLOCATIVE

tasatáweia't	*ia'satáweia't*
ta-s-at-awei-a't	*ia'-s-at-awei-a't*
CISLOCATIVE-2AGT-MIDDLE-be.in-CAUS	TRANSLOCATIVE-2AGT-MIDDLE-be.in-CAUS
'Come in!'	'Go in!'

A number of California languages make more detailed distinctions. Central Pomo, of Northern California, contains a fairly typical set of directional suffixes on verbs.

(16) CENTRAL POMO DIRECTIONAL SUFFIXES — Frances Jack, speaker

		SUFFIXES	
čá-	'run' (root)		
čá·ʔwan	'run around, here and there'	*-aʔw-*	'here and there'
čámliw	'run around something'	*-mli-*	'around a point'
čá·q̓	'run by, run south'	*-aq*	'south, levelly, by'
čá·qač̓	'run uphill'	*-aqač*	'upward'
čá·law	'run downhill'	*-ala*	'downward'
čáway	'come running up to, against'	*-way*	'up to, against'
čáč̓	'run away, escape'	*-č̓*	'away'
čám	'run over, across something'	*-m*	'over, on, across'
čámač̓	'run northward'	*-mač*	'northward'

The historical sources of some of the Central Pomo directional suffixes can still be seen in verb roots that persist in the modern language.

(17) CENTRAL POMO ROOT ORIGINS OF DIRECTIONAL SUFFIXES — Frances Jack, speaker

ma-	'to be on'	*máw*	'he went over it, is on it'
mač-	'to cross'	*máčya*	'he went thataway (northward)'

Languages of the Chumash family of the south central California Coast show a somewhat more elaborate set of verbal prefixes indicating position and direction. Examples in (18) are from Ineseño. There are prefixes similar to the Mohawk cislocative (Ineseño *akti-* 'toward') and translocative (*yal-* 'away') and many more.

(18) INESEÑO CHUMASH — Applegate 1966: 339-45

akti-	'toward speaker'	*akit-na?*	'come'	(toward-go)
atal-	'on'	*atal-apay*	'be on top of'	(on-be over)
ati-	'to, toward'	*ati-kɨyimin*	'turn toward'	(to-turn.over)
hi-	'deep'	*hi-nowon*	'be deep'	(deep-stand)
kupa-	'around'	*kupe-lešexēn*	'[acorns] lie around where they fall'	(around-spread)
maquti-	'hither and thither'	*maquti-tap*	'go around visiting'	(around-enter)
mo-	'across'	*mo-lokin*	'cross mountains'	(cross-cut)
naqel-	'linearly'	*neqel-keken*	'be in row abreast'	(linearly-extend)
naqti-	'back'	*naqti-kitwon*	'withdraw'	(back-emerge)
palu-	'penetrating'	*palu-tap*	'bore a hole'	(through-enter)
qupili-	'linearly'	*qupili-nan'*	'walk in a row'	(linearly-go)
taya-	'upright'	*toyo-nowon*	'stand on end'	(upright-stand)
ti-	'off, onto'	*ti-lok'in*	'sever'	(off-cut)
tipa-	'intruding into'	*tipa-tun*	'butt in on'	(intrude-be.two)
tiwal-	'encircling'	*tiwa-k'om*	'embrace'	(around-caress)
ulu-	'into, against'	*ul-iqip*	'plug up'	(into-cover)
uš-	'off, away'	*uš-kuy*	'sweep away'	(away-hold)
wal-	'adjacent in line'	*wal-miy*	'make cord with several strands'	(adjacent-twist.into.cord)
yal-	'away'	*no-k-ya-kuti*	'I will go see it'	(will-I-away-go)
yili-	'all around'	*yili-tap*	'enter a crowd'	(around-enter)

Many of the prefixes are productive, but all are derivational, used to form lexical items, often idiomatic: *tipa-waq* 'gut a carcass' (intruding.into + burst); *si-mal-kawan* 'get lasso around head and one leg of an animal' (around + *si-kawan* 'enclose tightly').

A number of Northern California languages show spatial distinctions with relatively abstract meanings, such as Shasta, on the California-Oregon border. (The forms of the Shasta suffixes shift in complex ways according to context.)

(19) SHASTA SPATIAL SUFFIXES — Silver 1966: 144-52

-ehé·haw-	'across'	*tíyu?·ehéhé·ha·na*	'it's frozen over'
		kwehehá·ha·ma	'I covered it (with a lid)'
-ehé·wɨ-	'downstream'	*rúmpehé·waka?*	'he's swimming downstream'
-ehé·w-	'out of container'	*k'wéhe·nahá·wik·a?*	'he jumped out of (a corral)'
		k'účahé·wik·a?	'he fell out of (a boat)'
-aha·b-	'into circumscribed area'	*k'wá·ya·?·aha·pi·k'a*	'he scraped in his winnings from me'
		k'án·isaha·piruk	'he herded them together'
-wa·k-	'in liquid'	*kač·ipá·k*	'put it in to soak'
-ehé·-	'downward'	*k'wíkehémpik*	'she put her pack down'
-asw-	'away, off'	*kawá·s*	'take it away!'
-cw-	'upward'	*kat·ik'í·c*	'lift up your feet!'
-ahá·w-	'along, uphill'	*rá·wahá·wa·ka?*	'the path goes up the hill'
-ehé·ha·w-	'across'	*kumpehé·ha·?*	'swim across!'
-wáha·w-	'along the edge'	*kwí·?·iwá·ha·ma*	'he's sighting along (a gun)'
-?i·pú-	'through tube'	*ké·yehé?e·pú*	'crawl through a hollow log!'
-ipsiru-	'down into'	*k'wí·m·apsiruk*	'he went down into the hole to hunt for it'

Some suffixes can cooccur. The suffix *-ehé·-* 'downward', for example, can occur first in a sequence, and the suffix *-wa·k-* 'in liquid' later. Other first-position suffixes are on the left in (20), and some later suffixes on the right.

(20) COOCCURRING SPATIAL SUFFIXES IN SHASTA — Silver 1966: 152-5

-wak-	'within area'	*-kway-*	'up along'
-uhi-	'along with'	*-í·?i-*	'down along'
-ɦí·?i-	'into'	*-rakmaki-*	'here and there'
-tac·á-	'to'	*-ak·i-*	'encircling long object'
-knɨ-	'up over'	*-k'a·hú-*	'upstream from mouth'

The combination *-ɦí·?i-* 'into' plus *-wa·k-* 'in liquid', for example, appears in the verb *yarak'wí·?iwaka·* 'we fell into the water'. The combination *-ehé·-* 'downward' plus *-rakmaki-* 'here and there' appears in the verb *kúxam·ehempirakmak·ira·?* 'he's going from chair to chair (to see which is most comfortable)'.

Karuk, another language of northern California, shows an unusually rich set of derivational prefixes on verbs with abstract spatial meanings much like those of the neighboring Shasta.

(21) KARUK SPATIAL SUFFIXES Bright 1957: 92–105

-čak	'blocking'		
	ikrív-čak 'sit in the way, blocking passage'	*ikriv*	'sit'
-sap	'blocking'		
	imyáh-sap 'suffocate'	*imyah*	'breathe'
-riv	'at rest'		
	mú·t-riv 'lie in a handful'	*mut*	'place by hand'
-mu	'thither'		
	ivyí·h-mu '(group) arrive'	*ivyih-*	'PL go'
-ra·	'hither, hither from downriver, from downhill'		
	pá·θ-ra· 'throw hither'	*paθ*	'throw'
-unih	'down from a considerable height, hence downhill'		
	ikvírip-unih 'run downhill'	*ikvírip-*	'run'
-ura·	'up to a considerable height, thence uphill'		
	ikvírip-ura· 'run uphill'	*ikvírip-*	'run'
-faku	'hither from uphill'		
	ivyí·h-faku '(group) comes down from uphill'	*ivyih-*	'PL go'
-sip	'up to the height of a man or less'		
	iθvá-sip 'pack up'	*ʔíθva*	'pack'
-iš	'down from the height of a man or less'		
	ikyív-iš 'fall down'	*ikyiv*	'fall'
-rav	'in, into'		
	ikyí·m-nav 'fall into'	*ikyiv*	'fall'
-rámnih	'in or into a container'		
	iyvà·y-ramnih 'pour into'	*iyvay*	'pour'
-ríšuk	'out of a container'		
	ʔê·θ-rišuh 'take out (as from basket)'	*ʔê·θ*	'take'
-vara	'in through a tubular space'		
	ʔá·k-vara 'put one's hand into (a glove)'	*ʔak-*	'do with hand'
-kiv	'out through a tubular space'		
	vo·n-kiv 'slip out'	*vo·r*	'creep'
-rúprih	'in through a solid'		
	ʔa·m-núprih '(insect) eat through (wood)'	*ʔav*	'eat'
-rúprav	'out through a solid'		
	ʔíku-ruprav '(plant) to sprout'	*ʔíku*	'point'

-ruprin	'through'		
	súru-ruprih 'make a hole through'	*súru*	'make hole'
-fúruk	'into an enclosed space, usually a house'		
	ikvírip-furuk 'run indoors'	*ikvírip-*	'run'
-rúpuk	'out of an enclosed space, usually a house'		
	ikvírip-rupuk 'run outdoors'	*ikvírip-*	'run'
-rúpa·	'out of one's mouth'		
	imyá·h-rupa· 'exhale through mouth'	*imyah*	'breathe'
-várayva	'here and there within an enclosed space'		
	impú·k-varayva 'be warm all over (house)'	*impuk*	'be warm'
-kírih	'into or onto fire'		
	pa·θ-kírih 'throw into the fire'	*paθ*	'throw'
-ku	'onto a vertical surface'		
	paθrí·m-ku 'spread on'	*paθriv*	'spread'
-taku	'onto a horizontal surface'		
	išká·k-taku 'jump onto'	*iškak*	'jump'
-paθ	'around in a circle'		
	ʔí·h-paθ 'dance in a circle'	*ʔih*	'dance'
-rip	'off, out'		
	išpá·t-rip 'break (something) off'	*išpat*	'break'
	mú·t-rip 'take out'	*mut*	'carry'
-suru	'off, away'		
	ikyí·m-suru 'fall off'	*ikyiv*	'fall'
-tunva	'together, toward each other'		
	inhí-tunva 'tie together'	*inhi-*	'tie'
-θuna	'here and there, in various places'		
	ikfúk-uθuna 'crawl around'	*ikfúk*	'take'
-vra·	'over'		
	pikyív-ivra· 'fall over backwards'	*pikyiv*	'fall back'
-vrin	'in opposite directions'		
	ʔû·-vrin 'turn (something) around'	*ʔû·-*	'put'
-vruk	'down over the edge'		
	ikyív-ivruk 'fall down over (a bank)'	*ikyiv*	'fall'
-vraθ	'into a sweathouse, over'		
	vô·r-uvraθ 'crawl into, enter a sweathouse'	*vô·r*	'crawl'

Especially interesting is a set of suffixes that reflect a salient aspect of the environment in which the language was earlier spoken, an area stretching for 60 miles along the Klamath River. Orientation is often specified with respect to the river.

(22) KARUK RIVERINE DIRECTIONAL SUFFIXES — Bright 1957: 95-105

-rupu	'hence downriverward'	*-rô:vu*	'hence upriverward'
-ra:	'hither from downriver'	*-varak*	'hither from upriver'
-kaθ	'hence across a body of water'	*-rina*	'hither from across a body of water'
-kurih	'into water'		
-kara	'horizontally away from the center of a body of water'	*-ŕipa*	'horizontally toward the center of a body of water'

These suffixes enter into the same kinds of formations as those in (21): *pí·v-kara* 'step over (a creek)' (step-horizontally.away.from.the.center.of.a.body.of.water); *ikre·myá·h-rupu* 'north wind to blow' (blow-hence.downriverward). Their elaboration points to the frequent specification by speakers in earlier times of the orientation of events with respect to the river. Over time, the use of orienting phrases and words became routinized and, with constant use, the forms ultimately eroded to suffixes.

Pervasive references to the river in modern speech can be seen in texts recorded by Bright (1957). Karuk also contains full words that carry spatial meanings, nouns and adverbial particles such as *yúruk* 'far downriver'. These independent words are used in subtly different ways from the suffixes. They make a special point about a location or direction. The passage in (23) is from a story in which Coyote steps out onto a log in the river to take a drink and falls in. He then floats a long way downstream. The directions of the falling and floating are routinely specified with suffixes. They are highlighted in lines 2 and 3 by particles *'u·θ* and *yúruk*.

(23) INTERPLAY OF KARUK PARTICLES AND SUFFIXES — Nettie Reuben to Bright 1957: 165

Víri	*va·*	*vúra*	*'upi-kyíviv-ra·,*
thus	so	EMPH	he.fell-hither.from.downriver

'So he fell over.

Vássihkam	*'ú·θ*	*'úkyi·m-kar.*
backwards	toward.center.of.water	he.fell-horizontally.away.from.center.of.water

He fell backwards into the river.

Kári	*xás*	*yúruk*	*'uθívru·h-rup*
then	and	far.downriver	he.floated-hence.downriverward

And he floated downriver.

čavúra	*tá*	*yí·v*	*tó·pθívru·h-varak.*
finally	PUNCTUAL	far	floated.back-hither.from.upriver

Finally he floated a long ways downriver back to here.'

Languages of the Northwest coast have also developed elaborate grammatical means for specifying location and direction. Nisgha, a language of the Tsimshianic family spoken on the northern coast of British Columbia, contains a vast set of verbal proclitics for specifying spatial distinctions. Many show a range of concrete and abstract uses, like *qalksə=* 'through' or *la·x̣* 'at both ends'.

(24) NISGHA SPATIAL PROCLITIC — Tarpent 1987: 520-1, 529-30

qalksə=	'through something (a hole, tunnel, difficult experience)'		
qalksə=ká?ask^{w}	'look through' (as binoculars)	*ká?ask^{w}*	'look'
qalksə=nó?	'have a hole through'	*nó?*	'hole'
qalksə=k^{w}ɬák	'(garment) to be inside out'	*k^{w}ɬák*	'messed up'
qalksə=?álkax̣	'speak through (phone, CB radio)'	*?álkax̣*	'talk'
qalksə=?áqɬk^{w}	'make it through an illness, course of study, to graduate'	*?áqɬk^{w}*	'succeed'

Some show quite specific meanings related to the natural environment.

(25) NISGHA PROCLITICS — Tarpent 1987: 530-2

n̓a·=	'conspicuously against a background, emerging from the woods'		
n̓a·=t̓úc̓k^{w}	'have a black spot'	*t̓ú·c̓k^{w}*	'black'
n̓a·=húk^{w}	'stand at the edge of the woods'	*núk^{w}*	'stand'
n̓a·=yé·	'go/come back from the woods'	*yé·*	'go, walk'
q̓altix=	'deep in the woods, not visible from the village'		
q̓altix=yé·	'go into the woods'	*yé·*	'go, walk'
q̓altix=qó·ta	'(group) have all gone into the woods'	*qó·ta*	'all gone'
y̓aws=	'from a confined or hidden place into the open (e.g. from the bushes into the road, from within a cupboard, behind a curtain)'		
y̓aws=yé·	'appear (e.g. out of the bushes)'	*yé·*	'go, walk'
y̓aws=təyé·	'bring something out into the open'	*təyé·*	'take'
ƙic̓iɬ=	'into a confined or hidden place (e.g. into an inner room, a cupboard, backstage, etc.)'		
ƙic̓iɬ=qó·ta	'be all holed up somewhere'	*qó·ta*	'all gone'
ƙic̓iɬ=ksqó·q	'be the first to go in (to a hole)'	*ksqó·q*	'first'

hał=	'along parallel to, a line, esp. the shoreline'		
hał=yé·	'walk along something, esp. the shore'	*yé·*	'go, walk'
hał=sḵí	'(inanimate) lie along esp. the shore'	*sḵí*	'be'
ʔukʷs=	'outward, away from point of reference, esp. moving from shore towards the water, facing the water'		
ʔukʷs=ɬá·	'sit (on the beach, a rock), facing water'	*ɬá·*	'sit'
ʔukʷs=wíl	'get away from the village'	*wíl*	'be, act'
ukʷs=hé·tkʷ	'head out to sea'	*hé·tkʷ*	'extend'
caqam=	'towards the point of reference, esp. moving from water towards shore, reaching one's end or goal'		
caqam=túlpkʷ	'be (in the water) close to shore'	*túlpkʷ*	'close by'
caqam=páx	'run ashore (e.g. from a boat)' '(period of time) come to an end'	*páx*	'run'
caqam=ʔáqɬkʷ	'manage to get ashore, reach goal, end of period in life (graduate, marry)'	*ʔáqɬkʷ*	'succeed'

Proclitic combinations occur as well: *ʔukʷs=* 'facing water' plus *[t]ḵə=* 'dropping down to a lower level' yields *ʔukʷs=[t]ḵə=* 'on a high point, on a cliff': *ʔukʷs=[t]ḵə=ɬá·* 'sit on a high point, at the edge of a cliff'.

The inventory of locative proclitics is enormous, including also those in (26).

(26) NISGHA PROCLITICS — Tarpent 1987: 518-48

lu·=	'in, inside'	*lu·=ɬá·*	'be at home, in jail'
ʔakʷi·=	'outside, at the side'	*ʔakʷi·=kó·*	'be parked/moored outside'
ksə=	'out of something'	*ksə=káʔaskʷ*	'look out (window)'
ċilim=	'into something'	*ċilim=káʔaskʷ*	'look in'
tɬqan=	'opening, ajar'	*tɬqan=ɬá·tkʷ*	'sky to clear'
laqam=	'into something at top'	*laqam=páx*	'go aboard, get into car'
laqam=	'in the water'	*laqam=ɬá·*	'sit in the water'
ɬukʷs=	'out of something fr top'	*ɬukʷ=ɬikwántkʷ*	'fall overboard'
ni·=	'on something horizontal'	*ni·=ɬá·*	'sit on something'
laqaltip=	'under, without contact'	*laqaltip=ɬá·*	'sit/be under something'
ḳiltip=	'under the bottom of s.t.'	*kiltip=ʔúx*	'upset something' ('hit')
mín=	'upward'	*mín=yé·*	'go up, especially upstairs'
ɬip=	'downward'	*ɬip=yé·*	'go down, esp. downstairs'
pax=	'uphill'	*pax=yé·*	'go uphill, hike up'
ɬaqa=	'downhill'	*ɬaqa=yé·*	'go downhill'

tɬqali·=	'up a river, upstream'	*(ti)tɬqali·=wá·x*	'be paddling upriver'
ḳisə=	'downstream'	*kisə=ʔúlkskʷ*	'drift down the river'
caqa=	'across, affording passage'	*caqa=yóxkʷ*	'follow someone across'
sqa=	'across, barring passage'	*sqa=hútkʷ*	'stand in the way'
la·x=	'equally at both ends'	*la·x=ʔálkax*	'interpret (talk on each side)'
ḳa·ɬ=	'lopsided, pulling to side'	*ḳa·ɬ-hé·tkʷ*	'extend to one side'
ḳilɬa·=	'past (in space or time)'	*kilɬa·=qó·ta*	'have all gone past'
hakʷin=	'closer'	*hakʷin=ɬá·*	'sit closer'
wətin=	'further away'	*wətin=yé·*	'get further away'
[t]ɬqal=	'flat/flush against'	*[t]ɬqal=kó·*	'(boat) be moored, tied'
sa·=	'off, away from something'	*sa·=yé·*	'go off, away'
kʷils=	'back'	*kʷilks=yé·*	'walk back'
spə=	'horizontally off'	*spə=qús*	'jump off (boat, car)'
xlip=	'at one end, at tip'	*xlip=qanqínks*	'chew on the tip'
xċə=	'crosswise, across grain'	*xċə=hisyác*	'chop across grain'
wisin=	'lengthwise, along grain'	*wisin=hé·tkʷ*	'rush (in canoe) at someone'
txas=	'along whole length'	*txəs=yé·*	'walk length (e.g. of fallen log)'
xpə=	'at halfway point'	*xpə=kú·[t]*	'catch in mid-air'
sḵʷin=	'at end of line or row'	*sḵʷin=hútkʷ*	'stand at end of a row'
ḳimi·=	'to the rear'	*kimi·=yé·*	'go towards rear of building'
ɬim=	'away from, esp. wall'	*ɬim=yé·*	'come to middle of the house'
ḳina·=	'left behind'	*kina·=kʷálkʷ*	'(boat) left high and dry'
loɬqali·=	'behind, at end'	*loɬqali·=yé·*	'walk behind'
łim=	'in front/toward/expecting'	*łim=máqskʷ*	'(group) stand waiting for one'
[t]ḳu=	'around in a circle'	*[t]ḳu=yáltkʷ*	'turn around'
[t]ḳutḳu=	'all around something'	*[t]ḳutḳu=wán*	'sit in a circle, around room'
haspa·=	'concave side up'	*haspa·=kó·*	'boat on land, person reclining'
pəlxsim=	'concave side down'	*pəlxsim=kó·*	'(boat) upside down on land'
ḳinxł=	'upside down, head down'	*ḳinxł=hé·tkʷ*	'be head down' (bat hanging)
haltim=	'up from the ground'	*haltim=ɬá·*	'to sit up'
[t]ɬqayks=	'close to the ground'	*[t]ɬqayks=ké·ł*	'lie on the ground or floor'
pa[qa]yt=	'in half crosswise'	*pa[qa]yt=pís*	'tear in half'
ḳis=	'from one place to other'	*kis=lúkʷs*	'move away (to live elsewhere)'
kʷli·=	'all over, randomly'	*kʷli·=mán*	'smear all over'
ḳilɬqal=	'all over, completely'	*kilɬqal=mán*	'apply all over (cream on face)'
stax=	'on one side only'	*stax=yúkʷ*	'hold in one hand, under arm'
sax=	'together'	*sax=dóx*	'gather things together'
lukʷłə=	'right under'	*lukʷłə=hútkʷ*	'stand right under something'
maqłə=	'right over'	*maqłə=qús*	'skip rope'

Languages of the nearby Wakashan family of the British Columbia coast have also developed elaborate grammatical means for describing location and direction. They contain hundreds of suffixes each. The effect of the suffixes can be seen by comparing words based on the root *lá-* 'go' from Kwakwala, the language of the Kwakiutl.

(27) KWAKWALA SPATIAL SUFFIXES Boas 1947: 301-77

lá-wəls	'go out of house'	*l-ǽstaliłəla*	'go around in house'
lá-sdes	'go up from beach'	*l-ánċesəla*	'go down to beach'
lá-gæs	'go about on roof'	*lá-gægənd*	'go to edge of (lake)'
lá-xəyud	'reach the top'	*l-ˊnxənd*	'reach the edge'
lá-ẇił	'go across'	*la-ʔéƛ*	'go into house'
lá-xsəag	'go into woods or ashore'	*lá-xɬa*	'go out to sea'
la-ẏaga	'go inland'	*lá-sdes*	'go up from beach'

The effect of the same suffix with different roots can be seen in (28).

(28) KWAKWALA SPATIAL SUFFIXES Boas 1947: 369, 373

a. *-xsəag, -xsəakəla* 'into woods, from sea to shore'

qáċag	'walk into woods'
ṗəłċag	'fly landward'
láxsəakəla	'go along into woods'
nəxsəakəla	'take a string of fish to shore'
néẋusəakəla	'go into woods at night'
ẋʷélaxsəag	'turn back into woods'
xałċagənd	'drive inland'
qʷɬċag	'waves strike shore'

b. *-(x)ɬa, (x)ɬa·ɬa* 'seaward'

láxɬa	'go out to sea'
ṗəƛəɬá	'fly seaward'
hánƛəɬod	'shoot seaward'
nə́mdzəɬa	'canoe moves seaward'
dó·gwəɬala	'look seaward'
gə́lgəɬa	'swim seaward'
ságəɬa	'go with a smaller canoe to a canoe anchored out seaward'
pəẋʷɬá	'drift seaward'
ƛa·xʷɬa	'steer seaward'

The suffixes appear on both nominals and predicates.

(29) KWAKWALA SPATIAL SUFFIXES ON NOMINALS AND PREDICATES Boas 1947: 369-70

-xsiu 'mouth of river'

ƛəxsíwe	'mouth of river with bar'	*kʼʷáxsiud*	'sit down at mouth of river'
wə́nxsiu	'deep mouth of river'	*méxsiwe*	'sleep at mouth of river'

Some suffixes specify location, some direction, and some either.

(30) KWAKWALA LOCATION AND DIRECTION Boas 1947: 346

-ċâ 'in, inside, into'

peċâla	'have medicine inside'	*gáxċâ*	'come in'
wədəċâ	'cold inside'	*kʼəpċâla*	'put in with tongs'

As in Nisgha, a substantial proportion of the suffixes pertaining to space reflect the natural environment in which the language is spoken.

(31) KWAKWALA SPATIAL SUFFIXES Boas 1947: 301-77

-ənsa	'under water'	*xəmə́nsa*	'snare under water'
-ənċes	'down to beach'	*lánċesəla*	'go down to beach'
-ənẋ	'edge'	*ċəmə́nxənd*	'melt at edge'
-ˊalod	'on rock'	*aẋalod*	'put down on rock'
-aẇił	'across'	*taẇiłəlá*	'wade across'
-abo	'underneath'	*səbábod*	'throw long thing under'
-amak	'on surface of water'	*yáyaxwàmak*	'rise out of sea dancing'
-amala	'along bank of river'	*ná·gamala*	'go along bank of river'
-atus	'downriver'	*qásatosɬa*	'start walking downriver'
-aq̓əs	'back and forth'	*nápaq̓əs*	'throw ball back and forth'
-axsa	'away without definite aim'	*pá·ẋwaxsa*	'float away'
-axa	'down'	*nə́axa*	'aim down'
-emˊ	'nearby'	*ẇənémˊs*	'hide outside, nearby'
-iɬæla	'here and there'	*qá·siɬæla*	'walk about'
-iɬ	'on the floor, in the house'	*nˊəmáiɬ*	'live together in house'
-is	'open space, on the beach, in world, bottom of water'	*hæˊnés*	'canoe is on beach'
		lásdes	'go up from beach'
-ˊs	'on ground outside house'	*méẋməẋás*	'sleep outside'
-ˊa	'on rock'	*yáq̓ʷa*	'lie dead on rock'
-ẋs	'in a canoe'	*kʼʷaẋs*	'sit in a canoe'
-ẏak	'back into woods'	*laẏak*	'go into woods'
-oẏod	'middle'	*ċəmóẏod*	'melt in middle'
-usta	'upriver'	*tástala*	'wade upriver'

-usdes	'up from beach'	*óχɬosdésəla*	'carry up from beach'
-ala	'on the water'	*pexála*	'drift'
-wəls	'out of house'	*yəχəwəls*	'dance going out the door'
-wenekała	'one on top of another'	*há·qəwenekała*	'lie one on top of another'
-wəqâ	'out of hole'	*q̓ołwəqâ*	'water wells up out of hole'
-bəta	'in, into hole'	*dəxʷbətá*	'jump into hole'
-es̓ta	'around'	*yəχʷses̓tála*	'dance around'
-seqʷa	'across'	*nəpségʷił*	'throw across in house'
-s̓ta	'in(to) water, air'	*las̓tá*	'go bathing'
-dzod	'on a flat thing'	*hanl̓dzód*	'put kettle on'
-c̓â	'in, inside'	*gáχc̓â*	'come in'
-neqʷa	'corner, side of house'	*hánnegʷił*	'(kettle) stands in corner'
-(g)əga	'inside hollow object'	*æχəgənd*	'put into dish'
-(g)əɬ	'away, without goal'	*ɬépəliła*	'lift foot from floor'
-(g)æɬ	'towards goal'	*ɬep̓álił*	'step on floor'
-łəla	'above ground'	*aχá·ɬela*	'get on a thing'
-(g)æs	'on, onto roof'	*k̓ʷá·gæs*	'sit on roof'
-(g)æq	'along, riverbank, lakeshore'	*k̓ʷá·gæge*	'sit still on bank'
-(g)iwe	'bow of canoe'	*ɬá·χəgiwe*	'stand in bow'
-(k)əy̓e	'on top (of surface)'	*χodzəɬəy̓ə*	'sprinkle over'
-(g)oχẃid	'between, together'	*aχó·χẃidənɬaq*	'I put them together'
-qʷap	'fire'	*ɬéqʷapɬənd*	'put stones on fire'
-q̓əniχʷa	'in front of'	*hè·q̓ənχʷəla*	'step right in front of'
-ʾqa	'inside'	*ẃánẃaqa*	'hide inside'
-xiu	'on top'	*dáxəyud*	'take up to top'
-(x)sâ	'through hole, closed space'	*səksâ*	'spear through'
-(x)sənd	'in two parts, off of fire, off from sea (landward)'	*hánxsənd*	'take kettle off fire'
		gélxsəa	'swim ashore'
-(x)səag	'into woods, sea to shore'	*qác̓ag*	'walk into woods'
-(x)səχɬa	'across a hill'	*qásəχɬa*	'walk across a hill'
-xsæ	'about, aimlessly'	*p̓ałc̓æ*	'fly about'
-(x)siu	'mouth of river'	*xəm̓xsiúd*	'snare at mouth of river'
-(x)sta	'down to ground'	*sópstas̓a*	'chop down to ground'
-xɬa	'on the fire'	*nəp̓ámxɬənd*	'throw on the fire'
-(x)tâ	'on top of long object'	*nəbətód*	'throw on top'
-(x)ɬa	'seaward'	*láxɬa*	'go out to sea'
-χsegənd	'in front of house'	*χudzəxségənd*	'beat boards outside house'
-ʾχsd	'behind, tail end'	*sióχʷsde*	'be paddling behind'
-ɬe	'moving on water'	*səbəplə*	'canoe starts on water'

A number of suffixes invoke body parts. These, too, occur on both nominals and predicates. They indicate general involvement of the part without specification of its role, though it is most often a location: *-(x)səyap̓* 'shoulder, upper arm', *apsółtsəyap̓e* 'one arm', *c̓ál̓c̓əlxsəyap̓e* 'wing feathers', *gə́mxəyap̓ala* 'carry blankets on shoulder'.

(32) KWAKWALA SUFFIXES PERTAINING TO AREAS OF THE BODY Boas 1947: 301-77

-ʾəmy̓a	'cheek'	*hánɬəmy̓a*	'be shot in cheek'
-ʾa	'ear'	*əsɬχó·d*	'put into ear'
-ap̓	'nape of neck'	*qáyap̓ənd*	'walk behind someone'
-abedze	'calf of leg'	*ɬənábedze*	'have pains in calf of leg'
-e·s	'inside of body'	*c̓əgʷí·s*	'getting hungry quickly'
-ʾes	'stomach, outside or in'	*c̓ən̓e·sə́lá*	'pain outside of stomach'
-eka	'back'	*p̓áldzekəla*	'have moss on back'
-p̓ega	'thigh'	*qəxp̓égənd*	'tie around leg'
-(k̓)ən	'body'	*nəχẃənála*	'have a blanket on body'
-k̓əlqəla	'front of body'	*q̓əɬk̓lə́lqəla*	'carry in lap'
-(g)əm	'face, head, in front'	*ná·naqəm̓a*	'try to hit face'
-ʾgenisbe	'inside of nose'	*dódəq̓wəgénisba*	'look into nose'
-(x)sis	'foot'	*bəxsís*	'get cut on foot'
-(x)dazm̓o	'in front of body'	*hánxdzam̓olił*	'have a dish in front'
-(x)c̓ana	'hand'	*axc̓ánənd*	'put into hand'
-ʾxo	'neck'	*qənxód*	'put around neck'
-xɬæ	'on top of head, name'	*axəxɬæ*	'be on head'

The meanings of many body part suffixes have been extended metaphorically.

(33) METAPHORICAL EXTENSION Boas 1947: 330, 314, 330, 330, 304

-eɬ	'into mouth, house, inlet'	*-ʾχɬa*	'hind end, stern of canoe, following'
gʷəgéɬa	'pour water into mouth'	*ẃədaχɬá*	'cold at hind end'
axéɬa	'take into house'	*dənóχɬala*	'be in a row one behind the other'
yólaéɬəla	'canoe drifts into inlet'		

-iɬba	'outside of nose, point of land'	*-ənsa*	'down in throat, under water'
kédziɬbe	'nose ornament'	*lándzəm*	'go down throat'
ɬənéɬbe	'steer at a point of land'	*χəm̓ənsa*	'snare under water'

A detailed discussion of placenames among the Kwakiutl is in Boas 1934a.

Other interesting systems of spatial categories can be seen in Pawnee, described under Caddoan, and in the Athabaskan languages, described in 4.5 on applicatives.

3.8 Time

Time can be expressed in a number of ways, from full clauses (*whenever I see him, the night I lost my keys*), to phrases (*the day after tomorrow*), to words (*Sunday, now*), to parts of words (*I laugh-ed*). Here we will consider the expressions of time that are most intimately integrated into grammar, those carried by prefixes and suffixes. Temporal categories expressed by affixes fall into two broad categories: tense and aspect. Tense markers situate an event or state in time with respect to some point of reference, usually the moment of speech. Thus past tense may mark an event that occurred before the moment of speech, future tense afterward. Aspect characterizes the internal temporal structure of an event. English *I jumped*, *I was jumping*, and *I used to jump* are all past tense, occurring prior to the time of speech, but they differ in aspect. With the perfective aspect *I jumped*, the speaker packages the event as a single, undifferentiated unit, viewed as a whole from the outside. With the progressive aspect *I am jumping*, the speaker focuses on an ongoing portion of the action, without regard to its beginning or endpoint. With the habitual *I used to jump*, the speaker specifies the recurring character of the activity.

3.8.1 *Tense*

As elsewhere in the world, languages in North America differ greatly in their tense systems, not only in their inventories of tense categories, but also in the nature of these categories and the uses speakers make of them.

A number of languages contain no grammaticized tense categories at all. Describing Yurok, for example, an Algic language of California, Robins reports:

> There are no formally differentiated tenses in the Yurok verb. Verb forms of any paradigm, except the imperative, may be interpreted as referring to past, present, or future time, according to the linguistic and nonlinguistic contexts in which they occur. (Robins 1958: 32)

Other North American languages similarly show no specialized tense affixes, among them Keres (Irvine Davis p.c. 1995), Pawnee (Parks 1976: 86), and Klamath (Barker 1964: 103). By contrast, some languages show elaborately developed tense systems, with large inventories of categories. Jacobsen lists the following tense suffixes that appear in verbs in Washo, a language of Nevada.

(1) WASHO VERBAL SUFFIXES — Jacobsen 1964: 589-647

-lul DISTANT PAST
: before the lifetime of the speaker.

-gul REMEMBERED PAST
: in the distant past but still within the lifetime of the speaker.

-ay? INTERMEDIATE PAST
: a time in the past earlier than the same day but not in the extremely distant past.

-leg RECENT PAST
: an earlier point on the same day, or during the preceding night.

-áša? NEAR FUTURE
: in the near future with respect to the time of speaking. The range of time covered extends from the immediate future to a time perhaps an hour or so later.

-ti? INTERMEDIATE FUTURE
: expected to take place in the future, not immediately but after the lapse of a short interval of time. This usually places the event in a later portion of the same day, although if one is speaking late at night, the event may be due to occur the following morning.

-gab DISTANT FUTURE
: further in the future than one indicated by the intermediate future, expected to take place on the following day or at any later time.

Some of the Muskogean languages show a comparable development of tense categories. Haas 1940 (also discussed in Booker 1980: 112-58) lists four basic past tenses for Creek, spoken in Oklahoma and Florida: *-anta* 'long ago', *-imata* 'a few years to several weeks ago', *-aŋk* 'any time between several weeks ago and yesterday', *-h* 'from the night before to earlier the same day'. A fifth suffix *-a:ti*, termed the historic or indefinite past, is used when the time is unknown or irrelevant. There are just two future suffixes: *-ali:* 'shall, will', and *-ała:n* 'be going to'.

The number of past tense categories in a language is usually at least equal to or, more often, greater than the number of future tense categories. Washo contains four past tenses but three futures, and Creek four pasts and two futures. The discrepancy is not surprising. Speakers have more detailed awareness of time they have experienced than time they can only imagine. The individual categories are not, furthermore, uniform in duration. The more remote they are, the larger the span of time they cover. The Washo distant past could cover millennia, the remembered past several decades, the intermediate past only a few years, and the recent past perhaps a day. These spans reflect differences in the quality of memory associated with such times. Events of a thousand years ago may not differ significantly in the mind of the speaker from those of centuries ago, but they do differ from those of yesterday.

A number of North American languages show a tense distinction in imperatives, differentiating commands meant to be carried out immediately from those meant to be carried out after some delay. Sapir describes both for Takelma, of Oregon.

> The present imperative expresses a command which, it is intended, is to pass into more or less immediate fulfillment, as in 'Go away!', while the command expressed by the future imperative is not to be carried out until some stated or implied point of time definitely removed from the immediate present, as in 'Come tomorrow!', 'Give her to eat!' (until she recovers). (Sapir 1922: 157-8)

Central Alaskan Yup'ik, an Eskimo-Aleut language, also contains multiple forms for requests, among them an immediate imperative and a future (delayed) imperative.

(2) CENTRAL ALASKAN YUP'IK COMMANDS — Elizabeth Ali, speaker

aqumi	'sit down right now'
aqumkina	'[go in and] sit down'

The first was said to a child who had been called to dinner but was dawdling. It would not be a polite way to invite a guest to be seated. The second was used by a hostess who met her guest on the porch as she was on her way out. After talking awhile, she urged the guest to go into the house and make herself comfortable, while she got fish from the freezer. (Other forms for requests are also available to indicate endearment and courtesy.)

Tense markers appear most often with verbs. This is not surprising, since verbs typically represent events which are inherently dynamic in nature, involving change over time. A number of languages show tense markers with nouns as well.

(3) CENTRAL ALASKAN YUP'IK TENSE ON NOUNS — Elizabeth Ali and George Charles, speakers

VERBS:	*nerua*	'I'm eating'	*ayagtua*	'I'm going'
	nerellruunga	'I ate'	*ayallruua*	'I went'
	nerciqua	'I'll eat'	*ayagciqua*	'I'll go'
NOUNS:	*ikamraqa*	'my sled'	*nuliaqa*	'my wife'
	ikamralqa	'my former sled'	*nulialqa*	'my late/ex-wife'
	ikamrarkaqa	'my future sled'	*nuliarkaqa*	'my wife to be'

Nouns with past tense markers typically denote entities that existed in the past. If the nouns are possessed, the past tense marker may indicate either prior existence or prior possession. The Yup'ik past tense noun *ikamralqa* 'my former sled' would be used to refer to a heap of splintered wooden ribs from a sled that had disintegrated, or to a sled of mine that I remember from an earlier time, whether or not it still exists. Future tense nouns show the same patterns. Mrs. Ali, a speaker from Bethel, Alaska, remembers visiting her father's workshop as a child, where he would show her pieces of wood he referred to as *ikamrarkaqa* 'my future sled'. The same noun could be used for an existing sled that someone is planning to give to me.

Tense markers in Barbareño Chumash of coastal southern California are nearly the same in form on verbs and nouns. Past tense is indicated by *-waš* on verbs and *-iwaš* on nouns; future tense is indicated by a prefix *-sa?-* on both. (Possessed nouns typically appear with a demonstrative, like the clitic *he?=* 'this' or *ho?=* 'that' with 'house' below.)

(4) TENSE IN BARBAREÑO CHUMASH — Mary Yee, speaker

VERBS:	*ʔip*	'say'
	ḵ-ip	'I say'
	ḵ-ip-waš	'I said'
	k-sa?-ip	'I will say'
NOUNS:	*ʔap*	'house'
	he?-ḵ-ap	'(this) my house'
	ho?-ḵ-ap-iwaš	'(that) my house that was'
	ho?-k-sa?-ap	'(that) my house to be'

The past tense noun *ho?ḵapiwaš* 'my former house' could be a house that had tumbled down or, more often, the house I used to live in. The future *ho?ksa?ap* 'my house to be' could be a house I am building or one that I plan to move into. Use of past nouns in context can be seen in (5). The speaker had noted that 'When a fisherman dies, his fishhooks are buried with him so that he will be able to go fishing.

(5) BARBAREÑO CHUMASH PAST TENSE NOUNS IN CONTEXT — Mary Yee, speaker

čuwa?alalwəličwaš,
ču=wa=?alal-wəl-in-š-waš
and=if=AGENTIVE.NOM-shoot-do-IMPERFECTIVE-PAST
And if it had been a hunter (PAST)

ʔisamsinayus	*hisʰapʰapiwaš*	*hilwə*
ʔi=s-am-sinay-us	*hi=s-hap-hap-iwaš*	*hi=l-wə*
CLEFT=3-INDEFINITE-put.in-BEN	DEP=3-RDP-horn-PAST	DEP=the-deer

they put in his deer horns (PAST),

kesʔax,	*kesyahya?,*	*kemeliya*	*hilčoyčoyni?.*
ke=s-ʔax	*ke=s-yah-ya?*	*ke=meliya*	*hi=l=čoy-čoyni?*
and=3-bow	and=3-RDP-arrow	and=all	DEP-the-RDP-other

and his bow, and arrows, and all the rest.

kesamisiṅay	*wayi*	*hisxoloxiwaš*	*hilpaxat.*
ke=s-am-siṅay	*wayi*	*hi=s-xolox-iwaš*	*hi=l-paxat*
and=3-INDEFINITE-put.in	also	DEP=3-rib-PAST	DEP=the-whale

And they also put in a whale's rib (PAST).'

The nouns for 'horn' and 'rib' are marked as past because they no longer belong to the deer or the whale. Similar tense marking was reported by Boas for Kwakwala, a Wakashan language of British Columbia (1947: 240). The remote past *-wɛł* appears in both *g·á·x̌-wɛł-ɛn* 'I came long ago' and *ó·mp̓-wɛł* 'the late father'; the future *-ƛ* in both *ƛé·gadɛ-ƛ* 'he will have a name' and *xwá·k̓wɛna-ƛ* 'a future canoe'.

Past tense nouns are not uncommon in North America, particularly as decessives for referring to persons no longer alive. Washo shows two different past tenses with nouns. One is the defunctive *-uŋil*, used with both verbs and nouns to indicate a condition or entity no longer in existence. Sometimes it serves to emphasize that the action was characteristic of people now dead, no longer practiced. Jacobsen reports that nouns with it can have 'the force of profanity or imprecation, as they convey the feeling of wishing that the individual addressed were dead' (1964: 484).

(6) WASHO DEFUNCTIVE — Jacobsen 1964: 608, 482

VERBS	*há?š-uŋil-egi*	'it was raining (but has stopped)'
	ɬ̓íheba ʔí?y-uŋil-i	'it was on his head (but has been removed)'
NOUNS	*ɬ̓ánuy-uŋil*	'dead person, dead people'
	di?malóloy-uŋil	'my late parents'
	géwey-uŋil	'dead coyote, damn coyote'

Washo also contains another nominal suffix with past tense force, but with a slightly different meaning. Descended from the verb *á?y* 'be away, out of the way, discarding', it adds the meaning of being 'discarded, worn out, or superseded' (1964: 484).

(7) WASHO 'DISCARDED' — Jacobsen 1964: 484

mókgoy-áy?	'old shoe'	
démluy-áy?	'garbage'	(*démlu* 'food')
bumé·li?-áy?	'ex-husband'	

The span of time covered by a tense category is affected by the number of categories distinguished in the language. Mutsun, a Costanoan language of coastal California, contains both a remote past suffix *-s* and a recent past suffix *-n*. Each necessarily covers a shorter span of time than would the general past tense of a language with only one.

The number of distinctions is not the only way that tense systems vary. Some of the differences stem from the historical origins of the particular markers. Leer describes two past tenses in Haida, of Alaska and British Columbia.

> The past form corresponds with the English simple past, with the reservation that it refers to an action which the speaker has present knowledge of or has experienced himself: *hl kínggan* 'I saw it', *dii 'láagan* 'I was fine', *hal tl'üigan* 'she sewed it'. The inferential form is also a past form, but refers to something which the speaker has not experienced for himself but has found out by inference or by being informed of it: *hal kyáangaan* '(Oh, so) she saw it', or '(I'm informed that) she saw it'; *dáng 'láagaan* 'so you were fine (as I gather)'. (Leer in Lawrence 1977: 79)

This second suffix, *-ga*, originated as an evidential marker indicating that the speaker is not basing his or her statement on personal experience. Levine describes it as follows:

> *-ga* . . . indicates that the speaker has no first-hand knowledge of the information contained in the clause to which the predicate it inflects belongs. It appears quite commonly in the narration of traditional textual material . . . This suffix can only be applied to past situations. (Levine 1977: 116)

Since it appears only in past situations, the suffix is apparently coming to be interpreted as a past tense marker itself.

> *-ga* is used to indicate the past tense in contexts where there is no overt tense marking ... In certain dependent predicate structures, the second-hand information suffix is used to mark past occurrence even in non-interrogative forms, and even when the speaker is a participant in the action indicated by the stem . . . The use of *-ga* [in these contexts] suggests that an extension of its earlier semantic range has recently been under way. This extension seems logical enough, since the second-hand information suffix is almost completely restricted to past contexts ... Such semantic extensions are not uncommon among evidential systems generally. (Levine 1977: 116-9)

Future tenses may also retain semantic features of their historical sources, such as expressions of volition, intention, prediction, or motion. Montler notes the special connotation of the future in Saanich, a Salish language of British Columbia.

> *sə?* 'future' marks the proposition as being strongly expected to have factuality at a time subsequent to the present . . . [It] seems to add the implication that the speaker has a certain amount of control over or is quite sure of the future truth of the proposition. An aspect of the meaning of *sə?* is that it only occurs with predicates that do not involve an emotional state. (Montler 1986: 213)

Rose describes a similar connotation for a future tense suffix in Kyuquot Nootka, a Wakashan language of Vancouver Island, British Columbia.

> There is no simple future tense in Kyuquot; that is, an inflectional affix indicating that an event will occur subsequent to the utterance-defined present. Instead, there is a morpheme *-ʔa:qƛ* FUTURE which unites the sense of future tense with that of intention, at least in contexts where there is the possibility of control or intention by a participant. (Rose 1981: 209)

Tense markers with specialized meanings can also evolve from combinations of affixes. The Yup'ik *-ngairute-*, for example, is a negative future, but it also implies a definitive change of mind, contrary to expectation. Mrs. Ali noted the use of *ayʼagngairutuq* when a mother had worked hard for years to send her daughter away to school, but the daughter suddenly refused to return.

(8) CENTRAL ALASKAN YUP'IK NEGATIVE FUTURE — Elena Charles, speaker

ayagngairutut
agag-ngairut-u-q
GO-NEGATIVE.FUTURE-INTRANSITIVE.INDICATIVE-3SG
'she absolutely will not go'

The suffix, now a unit, is a combination of a suffix *-ngir-* 'to un-V' and an applicative.

It might be thought that at least present tenses must be equivalent across languages, specifying the moment simultaneous with the moment of speech. In fact languages can vary in the span of time covered by their present tenses. Among the most basic tense distinctions found in verbs in Yup'ik are an unmarked present, a past *-llru-*, an immediate future *-qatar-*, and a more general future *-ci(i)qe-*. The tense system seems at first straightforward, not very different from that of English.

(9) CENTRAL ALASKAN YUP'IK TENSES — Elizabeth Ali and George Charles, speakers

nalkutaqa	'I'm finding it'	*ayagtua*	'I'm going'
nalkutellruaqa	'I found it'	*ayallruua*	'I went'
nalkutqataraqa	'I'm about to find it'	*ayakatartua*	'I'm going to go'
nalkuciiqaqa	'I'll find it'	*ayagciqua*	'I'll go'

The use of the tenses differs in interesting ways from that of their English counterparts, particularly that of the unmarked present tense.

Mr. Charles described the situation as follows. If he and a friend were out looking for a lost knife, and he suddenly spied it, he could use the present tense verb as he

was bending over to pick it up: *nalkutaqa* 'I'm finding it'. If he and his friend had been some distance apart, so that he had to walk a ways before announcing his good luck, he could still use this present tense verb. If the two men were far from home and spent most of the day returning, he could use the present tense to announce his success to his wife that evening. If his mother was asleep, he could even use the present tense verb to tell her the news the following morning. Mrs. Ali agreed, commenting, "To her, it's still lost until you tell her." Immediately after the announcement, the mother could turn to her own husband and use a past tense verb: *nalkutellrullinia* 'He apparently found it.' The Yup'ik unmarked present tense thus might seem to cover a larger span of time than the English unmarked present, including not only the moment of speech, but perhaps the preceding day and night.

But the difference is more interesting. Mrs. Ali reports that while preparing dinner, she might realize she had mislaid a knife. Discovering it a few moments later, she could use the present tense verb *nalkutaqa* as she caught sight of it. If her brother had been on his way outside as she began searching for it, but he returned 15 minutes later to find her in another room reading, she would have to use the past tense: *nalkutellruaqa* 'I found it.' This time the Yup'ik unmarked present tense seems to cover a span no longer than 15 minutes.

The same tense can also cover a time after the moment of speech. The present tense verb *nalkutaa* 'she's finding it' is appropriate just as someone is on the verge of discovery, before the discovery itself. We might see a child searching for a treasure in a game, for example, and say this as she comes close, even unknowingly.

The Yup'ik unmarked present tense category includes more than the moment of speech, but it does not correspond to a precise span of time. Rather than measuring objective time, it encompasses the full situation within the immediate consciousness of the speaker, what is categorized as immediate rather than displaced experience in the sense developed in Chafe 1994.

The Yup'ik present tense is not expressed by a suffix of its own, but simply the absence of any other tense marker. We might wonder whether it actually constitutes a coherent category in its own right, or is only the residue of situations not covered by other tense markers. In fact a number of other North American languages show present tense categories similar to that of Yup'ik that are overtly marked. Describing Chukchansi Yokuts of southern California, for example, Collord reports that 'the present tense marker, *-Baʔa-*, may indicate action taking place at present, or it may mark an event as being presently evident or important to the speaker' (1968: 47).

(10) CHUKCHANSI YOKUTS — Collord 1968: 47

xatʰ-Baʔa-eʔ nʼ na·Mʔ	>	*xatʰaʔanʼ naʔ*	'I'm eating now'
yukʼul-Baʔa-hil na·Mʔ	>	*yokʼolʔahil naʔ*	'I buried it a while ago'

Silver describes the present tense of Shasta, of northern California, in similar terms: 'The present tense describes an action or state of being at the time of speech. It is also used when talking about immediately past actions or states if the context for them is still in force at the time of speech.' (1966: 125)

Tense categories may vary in another way. In languages like English, where tense markers are 'absolute', the temporal point of reference is always the moment of speech. Past tenses consistently locate events before the speech event, and future tenses after it. Certain North American languages show a kind of 'relative' tense. In these languages the point of reference may be either the moment of speech as in English, or the time under discussion, such as the time line of a narrative. Relative tense patterns can be seen in a historical account from Barbareño Chumash of the revolt in 1824 by the people at Santa Ines against the Spanish missionaries. It was first told to J.P. Harrington by Luisa Ygnacio (1835-1922) around 1914. She had presumably heard it from her parents. During the 1950s it was dictated to Harrington in Barbareño Chumash by Mrs. Ygnacio's granddaughter, Mary Yee. The free translation is by Suzanne Wash. Mrs. Yee's account opens with the past tense suffix *-waš* in every clause.

(11) Barbareño: The First Revolt — Mary Yee to Harrington

luwisa kalčamin-waš? histimoloqin hihe?ltimoloqinaš.
'Luisa was the one who really knew (PAST) how to tell the old time stories.
he?lamnečpiy-waš i?akim hi?iti?alamisiyon.
This one happened (PAST) here around the Old Mission . . .
?akim hihe? hi?alneč-waš-?.
This is how it happened (PAST).'

These uses of the past tense are as we would expect. Mrs. Yee is situating her grandmother's telling and this particular event before her own time of speech.

An Indian page had overheard the Spaniards and reported that they planned to lock everyone inside the church and massacre them. In the reported quotation, attributed to the Spanish, the future tense prefix *sa?-* also operates as we would expect: it indicates a time after the moment of speech, subsequent to the page's announcement.

(12) Barbareño: basic future tense — Mary Yee to Harrington

"memali? wa mokliya mam hisamleken hisam-sa?-misa,
"When everyone is inside, seated for Mass (FUTURE),
kakiy-sa?-kiliqipuswun himam."
then we will (FUTURE) quietly lock them in."

Within narrative time, however, the tense marking differs from that of English. Forewarned, no Indians appeared in church on the Sunday in question, which frightened the padre. He immediately fled to Ventura, a mission to the east.

(13) Barbareño: absence of tense marking — Mary Yee to Harrington

himeka stiyikpi hiskoči
'He immediately got inside his coach
hika skiwon
and went out
he?micqanaqan ?aleqenini.
to head for Ventura.
kesiyutalataqpi? ho?lčalayaš hilin?inyu?
And the Indians began to block the trail.
hikasiy?ipus hiholpali ču skuwayapi.
And they told the padre to turn back.
keholin?inyu? ?isiyalixulusumu hisiyyahya? hiho?lkoči.
And the Indians aimed their arrows at the coach.'

Although these events are clearly part of the historic revolt, no past tense marker appears in the entire passage. We have entered the narrative time, which now serves as the deictic center. The tense is an unmarked relative present, simultaneous with narrative time.

Within the narrative, the past tense suffix marks events that occurred prior to narrative time, and the future tense prefix marks events that will occur subsequent to the reference point on the narrative time line. The Indians who had stopped the padre's coach on the way to Ventura were persuaded to let him pass, since he knew their leader. This angered the other Indians, who mutilated and killed the page.

(14) Barbareño relative past and future — Mary Yee to Harrington

ho?samsoloyin husmitipin hiho?alamisiyon,
'They laid him at the door of the Mission
čukanu liya he?lkuhku? ?isam-sa?-kuti
so that the people would see (FUTURE)
hihe?lamnesus-waš.
what they had done (PAST) to him,
kanu?am-sa?-čamin
they would know (FUTURE)
hihe?l kuhku? hi?alxinč hisamxəwə.
that a person had lied (PAST) badly.

nonó? sixwatatan
He was trembling
mehusalaxsum-waš.
from what he had suffered (PAST).'

There is no tense marker in the first line 'They laid him at the door of the mission', because the event takes place in sequence on the narrative time line. In the second line, 'so that the people would see', the future tense indicates a time after the narrative time. In the third line ('what they had done to him'), the past tense indicates a time earlier than the narrative time. Similarly the future prefix in 'they would know' indicates a time after the narrative time, and the past tense in 'from what he had suffered' a time before the narrative time. The line 'He was trembling' contains no tense marker, because it takes place in sequence at the time of the tale.

The use of tense can signal a shift out of the narrative time. In the last line of (15) Mrs. Yee has left the narrative time to comment from her modern perspective.

(15) BARBAREÑO MOVEMENT OUT OF NARRATIVE TIME — Mary Yee to Harrington
hikana hilcoyni hilališaw ?ikasiysiniwe hiho?lpaxi.
'And so on another day they killed the page.
siyqeseqenwun hiho?swačwača? keho?s?əlal
They cut off his arms and feet.
kesiyqeseqen hiho?s?elew
And they cut out his tongue.
kekasiytioplox hiho?stəqtəq.
And they cut out his eyes.
nonó? ?iyaxutiwileč-waš hihe?lin?inyu?.
The Indians were (PAST) very cruel.'

Relative tense can also be seen in Yup'ik (Mithun 1999c), Tlingit (Leer 1991: 341-9), Nootka (Rose 1981: 211-2), Karuk (Bright 1957: 67), and Lake Miwok (Callaghan 1963: 223). It is in some ways reminiscent of the historical present of English, in which speakers may shift to present tense to increase the immediacy of a narrative. It differs in that it is not primarily a rhetorical device reserved for heightening drama; the tense markers systematically take as their point of reference the narrative moment whenever there is a narrative line. The relative tense systems described here differ from those of Latin and Imbabura Quechua described by Comrie (1985:60-1) in not being restricted to subordinate clauses. The point of reference is established by the narrative pattern rather than syntactic structure.

In many languages the systematic specification of tense is obligatory, as in English.

In order to speak grammatically, speakers must specify tense in every main clause. In some languages, however, speakers have a choice. The optionality of markers may reinforce their pragmatic force. If they are used only when deemed important, the importance may be interpreted as part of their meaning. Describing Saanich, Montler (1986: 210) notes that the past tense marker has an emphatic connotation: 'Since tense marking is not obligatory in Saanich, *lə?* (past) is often used for emphasis. . . *lə?* is often translated into English by a sentence with the emphatic past tense "did".'

(16) SAANICH OPTIONAL TENSE — Montler 1986: 210

kʷɬ	*le?-sí-s-əŋ*	*lə?*	*sxʷ*
REALIS	repair-INDIRECT-CONTROL.TRANSITIVE-1OBJECT	PAST	2SUBJECT

'You did fix it for me.'

In many languages speakers have choices beyond whether or not to specify tense. They may also have options among possible tense categories. Upper Chinook, a Chinookan language spoken on the Columbia River, has an elaborate tense system, described by Sapir 1907, Dyk 1933, Silverstein 1974, and Hymes 1975. As Silverstein points out, much of the tense system in this language evolved diachronically from earlier aspectual distinctions still visible in related languages, perhaps in part under the influence of neighboring Salish languages. There are five basic tense prefixes, not unlike those seen earlier in Washo.

(17) UPPER CHINOOK (WISHRAM DIALECT) TENSE PREFIXES — Sapir 1907: 538-9

ga(l)-	MYTHIC PAST time long past, more than one year ago, used in the recital of myths
ni(g)-	REMOTE PAST used to refer indefinitely to time past, used in speaking of events that happened less than a year ago, yet more than a couple of days
na(l)-	RECENT PAST recent time exclusive of to-day, more specifically to yesterday
i(g)-	IMMEDIATE PAST an action already performed today
--	PRESENT an action now going on but with implication of soon being completed
a(l)-	FUTURE

The language also contains two directional prefixes, a translocative *u-* 'thither' for motion away and a cislocative *t-* 'hither' for motion toward the speaker. (Directionals are discussed in section 3.7.3.)

(18) Upper Chinook (Kiksht dialect) directional prefixes — Hymes 1975

ga-n-u-ya	*ga-n-t-i*
MYTHIC.PAST-1SG-TRANSLOCATIVE-go	MYTHIC.PAST-1SG-CISLOCATIVE-go
'I went'	'I came'

As described in detail by Hymes, the already elaborate tense prefix system was further enriched by the introduction of the cross-cutting translocative/cislocative distinction, indicating earlier and later times respectively within each category.

(19) Upper Chinook (Kiksht) prefix combinations — Hymes 1975

gal . . . u-	mythic age, or many years
gal . . . t-	within modern human experience, or few years
nig . . . u-	last season
nig . . . t-	last week
ig . . . u-	earlier today
ig . . . t-	just now
al . . . u-	immediate future
al . . . t-	remote future

(20) Upper Chinook (Wishram) tense — Silverstein 1974

i-n-i-u-łada-ba
IMMEDIATE.PAST-1SG.ERGATIVE-NEUTER.ABSOLUTIVE-TRANSLOCATIVE-throw-out
'I threw it out of the house'

i-n-i-t-łada-ba
IMMEDIATE.PAST-1SG.ERGATIVE-NEUTER.ABSOLUTIVE-CISLOCATIVE-throw-out
'I just now threw it out of the house'

Hymes notes that tense choice is more than a question of objective chronology.

> The tenses are not mechanically geared to fixed units of time. The *relative* temporal difference is invariably maintained within regular limits, but the immediate context affects the resulting calibration with days, hours, weeks, months, and years . . . Stylistic, or socioexpressive meaning enters as well. (Hymes 1975: 318)

Similar observations have been made about tense in other North American languages, among them Chukchansi Yokuts, Shasta, and Konkow (Maiduan), all of California.

> These three tenses [remote past, recent past, and simple past] are, hence, relative to each other. Their use depends on whether the speaker thinks of the event as more remote or more immediate. (Collord 1968: 40 on Chukchansi Yokuts)

> The near past is used in conversation and anecdote to describe events relatively recent in time from the speaker's point of view; for example, in an anecdote involving himself, SS [speaker Sargent Sambo, in his 90's] might use the near past to refer to an event that happened any time from the day before to fifty or sixty years ago. (Silver 1966: 127 on Shasta)

> *wòno* 'remote past' refers to situations which occurred at some time in the past which is felt to be remote by the speaker. This may have been in an absolutive sense such as for an event which transpired before the speaker was born, or in a relative sense associated with the occurrence which is beyond the speaker's range of memory. (Ultan 1967: 96-7 on Konkow)

3.8.2 *Aspect*

While tense locates events in time, aspect characterizes the internal temporal structure of a situation. The most basic aspectual distinction is that between perfectives and imperfectives. Perfectives present an event as a complete whole, without specification of internal temporal structure: *I danced*; *She'll find you.* Imperfectives look inside of the event, often at just a portion of it, and indicate temporal texture of various kinds: *I was dancing* (progressive); *I used to dance* (habitual); *I kept dancing* (continuative). They may focus on the beginning of a situation as do inceptives ('begin') or inchoatives ('become'), or the endpoint, as do completives. They may focus on relative duration, as do duratives and momentaneous markers. They may indicate recurrence, as do iteratives, repetitives, and frequentatives, or specify the single occurrence of an event, as do semelfactives.

Languages in North America, as elsewhere, show tremendous variety in their aspectual systems, both in the numbers of categories they distinguish and the kinds of distinctions they encode. In part because of these differences among languages, the terminology used in descriptions of aspect varies as well.

A simple aspectual system can be seen in the Northern Iroquoian languages of the Northeast. All indicative verbs (all verbs except commands) carry an aspect suffix: perfective, imperfective, or stative. Their functions are usually as would be expected. Single events are expressed with perfectives, ongoing or habitual activities with imperfectives, and states with statives. Perfects, essentially resultant states, are also marked as statives. Examples below are from Seneca of western New York State.

(21) Seneca aspect — Myrtle Peterson, speaker

PRF	*ǫkáhtaʔt*	'I got full'	*oʔkésyǫ:niʔ*	'I made it'
IMPRF	*akáhtaʔs*	'I get full'	*kesyǫ:nih*	'I make it'
STATIVE	*akáhtaʔǫh*	'I'm full'	*akésyǫ:ni:h*	'I've made it'

(Aspectual suffixes show considerable allomorphy. Tense and mode are indicated by additional affixes: *ę-késyǫ:ni?* 'I'll make it'.) Some verbs have only stative forms, because they never denote events, such as *akatǫswé?tanih* 'I'm hungry'.

For a number of verbs the stative aspect indicates ongoing events instead. The imperfective is used only for habitual activities, as in (22).

(22) SENECA STATIVE FOR ONGOING EVENTS — Chafe 1980

PRF	*o?katęno:tę?*	'I sang'	*o?kéthaę?*	'I talked'
IMPRF	*katę́:no:t*	'I sing'	*ketha:ha?*	'I talk'
STATIVE	*akatę:no:t*	'I'm singing'	*ake:tha:?*	'I'm talking'

Chafe (1980) shows that the difference in interpretation comes from the consequentiality of the event in question. Perfects express a current state that is the consequence of a previous event: 'I'm full', 'I've made it'. It is thus not surprising that they should be marked with stative morphology, but only when the verb denotes an event with perceptible consequences, as in (21). Since singing and talking have few perceptible consequences, the perfect meaning is ruled out. He illustrates the point with two Seneca verbs, both meaning 'cut': *-ya?k-* means 'cut in two, sever, break', while *-(h)en-* means 'make an incision'. The first is consequential, the second not, as can be seen by comparing the statives: *hoyá?kǫh* 'he has cut it', *ho:enęh* 'he is cutting it'.

Some actions can be interpreted either way, as with or without significant consequences. The verb 'eat', for example, might be considered nonconsequential if one is thinking of the activity, but consequential if one focuses on the satiation of the eater, so that it is no longer necessary to offer food. These statives are ambiguous.

(23) SENECA AMBIGUOUS STATIVES — Chafe 1980

PRF	*o?ke:?*	'I ate'	*o?káhs:k*	'I looked for it'
IMPRF	*i:ke:s*	'I eat'	*kihsa:s*	'I look for it'
STATIVE	*ake:kǫh*	'I'm eating'	*akáhsakǫh*	'I'm looking for it'
		'I have eaten'		'I've looked for it'

Some of the most elaborate aspectual systems are found among the Athabaskan-Eyak-Tlingit languages. The systems are not the same across the family; though they share basic patterns, they have developed in different ways since the languages diverged. Aspect in Koyukon, spoken in Alaska around the Koyukuk River, is described in Axelrod 1993. The Koyukon verb consists of a verb stem plus prefixes. The stem contains a verb root plus aspect and mode markers. The prefix complex consists of some 30 prefix positions. Aspect, which is obligatorily specified on every verb, is expressed through combinations of prefixes and stem choice.

A set of mutually exclusive prefixes distinguish imperfectives, perfectives, futures, and optatives. The imperfectives indicate ongoing, unfinished activities or states. The perfectives indicate completed actions or past states.

Aspect is further indicated by the shape of the verb stem. Stems are formed from verb roots through suffixation, spirantization, vowel lengthening, ablaut, or a combination of those processes, which can be quite complex phonologically. The meanings of some of the stem categories are prototypically aspectual, distinguishing states from events, duratives from momentaneous actions, and semelfactives from repetitives. Others are less so. The stem categories identified by Axelrod are: neuter, transitional, momentaneous, perambulative, continuative, persistive, reversative, durative, consecutive, repetitive, directive-repetitive, semelfactive, bisective, conclusive, and onomatopoetic. The shape of the stem varies not only with the aspectual category, but also with the modal prefix with which it occurs. Thus the durative stem for the verb 'to snow' has the shape *yoł* for imperfectives and the shape *yotl* for perfectives. Some of the imperfective and perfective prefixes share the same form, as do some of the stems for different aspectual categories, so basic aspect is fully distinguished only by the combination of prefix and stem.

(24) KOYUKON ASPECT BY PREFIX + STEM — Axelrod 1993: 34

a. *eɬyoł*
Ø-ɬ-yoł
IMPERFECTIVE-CLASSIFIER-SNOW.DURATIVE.IMPERFECTIVE
'It's snowing.'

b. *noghełyotl*
no-ghe-ɬ-yotl
ITERATIVE-PERFECTIVE-CLASSIFIER-SNOW.DURATIVE.PERFECTIVE
'It snowed again' (='There was a winter with heavy snowfall.')

Axelrod describes the functions of the stem categories as follows. Examples in (25) are based on the verb root *-'o* predicating actions or states involving a compact object. (Verbs translated with 'she' could also be glossed with 'he'.) The neuter is used for states; the transitional signals entrance into a state; the momentaneous with motion verbs indicates directed or purposeful movement; the perambulative describes wandering or elliptical motion; the persistive indicates repeated back-and-forth motion, usually against some constraint; the repetitive also indicates repeated back-and-forth motion, usually without constraint; the continuative describes motion out along a straight path and back. The reversative often describes reversal of motion or a turning over, as the flipping of a pancake.

(25) KOYUKON STEM CATEGORIES: STATES AND DIRECTED MOTION Axelrod 1993: 45-6

NEUTER	*ts'eh le'onh*	'a hat is there, in position.'
	bekk'aay hunaal'onh	'she is shy, ashamed.'
TRANSITIONAL	*bekk'aay hunaadle'ot*	'she became ashamed.'
MOMENTANEOUS	*yeenee'onh*	'she arrived carrying it'
PERAMBULATIVE	*kk'otlee'eet'oyh*	'she is moving her head around, looking in all directions'
PERSISTIVE	*netlee'et'oh*	'she is moving her head back and forth'
REPETITIVE	*yeyeghee'ok*	'she raised it repeatedly'
CONTINUATIVE	*eeyet neyeel'onh*	'she took it there and back'
REVERSATIVE	*k'ets'e noyedaal'onh*	'she turned it over, upside down'

Stem categories for activities are illustrated with the root *-tlaatl* 'chop' in (26). The semelfactive describes a single, abrupt action, and the consecutive repeated, abrupt actions. The directive-repetitive resembles the consecutive but with no effect on the object. The bisective indicates division into two parts. With activity verbs, the momentaneous indicates completion. The durative is used for activities carried out over an extended period or habitually, such as a means of employment.

(26) KOYUKON STEM CATEGORIES: ACTIVITIES Axelrod 1993: 46-9

SEMELFACTIVE	*yeeltleł*	'she chopped it once, gave it a chop'
CONSECUTIVE	*yegheetletl*	'she chopped it repeatedly'
DIR-REPETITIVE	*yootlaał*	'she chops at it repeatedly'
BISECTIVE	*yenaaltleł*	'she chopped it in two'
MOMENTANEOUS	*neeyeneetlaatl*	'she chopped it all up'
CONCLUSIVE	*yeghedaaltlaatl*	'she hewed it into a shape'
DURATIVE	*yegheetlaatl*	'she was chopping it for awhile'

A final category included in this set is the Onomatopoetic, which indicates the production of a sound or noise generated by an animal, instrument, or object. The roots on which these stems are based are imitative of a sound: *delggukk* 'it (a gull) is crying', *yaadelkket* 'she is making a snapping noise with it'.

Further optional aspectual distinctions may be specified on top of the obligatory ones expressed by the imperfective and perfective modal prefixes and the basic stem alternations. They are marked by additional prefixes and/or further derivational processes applied to stems. The prefix *ghu-* 'through', for example, can be added to verbs already marked for aspect, further affecting the aspect of the clause. In (27), the prefix can be seen on a verb with the perfective prefix *ne-* and the momentaneous perfective form of the stem 'chop'.

(27) KOYUKON PREFIX *ghu-* 'through' Axelrod 1993: 87

yughneetlaatl
ye-ghu-ne-Ø-taatl
3.SG.OBJECT-through-PERFECTIVE-CLASSIFIER-chop.MOMENTANEOUS.PERFECTIVE
'She chopped a hole through it.'

An inceptive prefix can mark the gradual, beginning stages of an event or state. (It contrasts with the basic transitional aspect in its gradualness.) In (28) the inceptive appears on a verb containing a perfective prefix and durative perfective stem shape.

(28) KOYUKON INCEPTIVE Axelrod 1993: 99

taatlkon'	*gheełkon'*
te-le-ł-kon'	*ghe-ł-kon'*
INCEPTIVE-PERFECTIVE-CL-rain.DURATIVE	PERFECTIVE-CL-rain-DURATIVE
'It started to rain.'	'It was raining.'

Customary and progressive verbs can be formed by further stem derivation. The customary describes an activity that occurs occasionally or habitually. It often occurs with the iterative prefix *no-* 'again'. The progressive is used for incomplete or ongoing actions or states, actions continued as one moves along, and inchoatives.

(29) KOYUKON CUSTOMARY AND PROGRESSIVE Axelrod 1993: 95, 99

no'eededzeh	*eededzaakk*
no-Ø-de-dzeh	*Ø-de-dzaakk*
ITERATIVE-IMPERFECTIVE-CL-dirty.CUSTOMARY	IMPERFECTIVE-CL-dirty.TRANSITIONAL
'It keeps getting dirty, gets dirty now and then.'	'It became dirty.'
eeghelnustl	*eelnoots*
ghe-le-nustl	*Ø-le-noots*
PERFECTIVE-CL-swell.PROGRESSIVE	PERFECTIVE-CL-swell.TRANSITIONAL
'It is swelling up.'	'It swelled up.'

The Koyukon aspectual system shows tremendous complexity not only phonologically and semantically, but also grammatically in the interaction of elements from different areas of the morphology. Like those of the other Athabaskan languages, it is a powerful tool, often serving functions accomplished in other languages by the lexicon. Alternative perfective prefixes on the momentaneous verb *'onh* for example, yield *yeenee'onh* 'she arrived carrying it', *yee'on* 'she found it', *kk'eł yetaal'onh* 'she threw it away', and *noyeghhee'onh* 'she took it down'.

3.9 Modality: knowledge and obligation

The term 'modality' has been used to cover a wide range of grammatical distinctions. Some, grouped together under the label 'epistemic', pertain to knowledge and belief, specifying the speaker's commitment to the truth of what is being related and the basis for that belief. Statements may be characterized, for example, as certain, probable, possible, unlikely, hypothetical, contrary to fact, etc. The evidence for the belief may be specified by markers termed 'evidentials' that distinguish sources of information such as hearsay, inference, conjecture, personal eyewitness, and other sensory cues. Another set of distinctions, sometimes termed 'deontic', pertain to obligation. These may include optatives, desideratives, abilitatives, hortatives, and others. Also often included within modality are kinds of speech acts, particularly declaratives for statements, interrogatives for questions, and imperatives for commands.

These distinctions seem at first somewhat heterogeneous. It could be argued that interrogatives are pertinent to knowledge, and that imperatives are within the realm of obligation. It has been suggested that epistemic and deontic distinctions are similar in representing calibrations along a continuum from the necessary (epistemic certainty or deontic obligation) to the possible (epistemic possibility or deontic permission). A more important reason for grouping them together is the fact that they are often expressed within the same grammatical paradigms in languages, whether by auxiliary verbs (such as English *should, might*), by particles, by clitics, or by verbal affixes. The paradigmatic patterns arise in part from recurring pathways of development, a tendency for markers of one category to be used for the other, resulting in ambiguity and diachronic change. English *should*, for example, is used both epistemically to indicate probability, as in *She should be there now*, and deontically for obligation, as in *She should go more often.*

All languages have ways of distinguishing statements, questions, and commands, whether by grammatical markers, intonation, or a combination. All languages can specify modal distinctions in full words or phrases: *She is certain to go; I heard him come in awhile ago; I want to come along.* They differ in the extent to which modal distinctions have been integrated into their grammars. Many North American languages show especially well-developed epistemic systems. The expression of these distinctions by grammatical means differs from expression by full words or phrases in a subtle but important way. It allows, and in some cases requires, speakers to specify routinely the reliability and/or source of information presented, without making that specification the main point of the utterance.

In the following sections we will look first at the kinds of grammatical distinctions that comprise modal paradigms in a sample of North American languages. We will then consider two kinds of distinctions that are particularly well developed in a number of languages, that between realis and irrealis, and those expressed by evidentials.

3.9.1 *Some sample modal paradigms*

The grammatical distinctions included under the heading *modality* in descriptions of individual languages vary, chiefly because the modal systems themselves have developed differently. Terminology varies as well. In some traditions, inflectional markers of modality are identified as *mood*, in others as *mode*. Further complicating matters is the fact that these terms, particularly *mode*, have sometimes been used for other kinds of distinctions as well, often aspectual. This is due in part to the fact that modal distinctions are often carried by tense or aspect markers. In material cited here, the terms appearing in the original descriptions will be retained. A sense of the nature of modality can be grasped by comparing some sample systems.

Tonkawa, a language isolate last spoken in Texas, contains a typical set of modal suffixes that appear on verbs. They include a declarative *-we/-o* (always followed by a tense suffix), assertive *a'a*, exclamatory *-gwa*, interrogative *-'* (with tense), intentive *-'a·ha'a/-a·'*, imperative *-u*, potential *-'a·/-'ai*, and exhortative *-e·l*.

(1) TONKAWA MODAL SUFFIXES — Hoijer 1931: 83-94

DECLARATIVE	*naxadjganaw-o-'o·'*	'I married.'
ASSERTIVE	*do·nan-a'a*	'He lies!'
EXCLAMATORY	*'awac'a·la hedoxa-gwa*	'The meat is all gone!'
INTERROGATIVE	*yaxa-'-ga?*	'Did you eat?'
INTENTIVE	*heul-a·ha'a*	'I shall catch him.'
IMPERATIVE	*'andjo-u*	'Wake up!'
POTENTIAL	*ya·dj-'a·-n'ec*	'I might see him.'
EXHORTATIVE	*hama'amdo·xa·dew-e·l*	'Let him be burned up.'

Maidu, a language of northern California, shows a comparable set of inflectional mood suffixes: an indicative *-'æ*, an interrogative *-ḱade*, an intentive (∅), a monitive *-yʔy* for warnings, a hortative *-á*, a present imperative *-pi*, and an absent imperative *-padá* for actions to be carried out at a later time, in the absence of the speaker. (The markers are somewhat obscured by various phonological processes.)

(2) MAIDU MODAL SUFFIXES — Shipley 1964: 46-52

INDICATIVE	*sólḱas*	'I sang.'
INTERROGATIVE	*sóḱades*	'Am I singing?'
INTENTIVE	*ʔyḱójʔis*	'I'm going to go.'
MONITIVE	*wónobys*	'I might die.'
HORTATIVE	*ʔyḱójtàs*	'Let me go!'
PRESENT IMPERATIVE	*sólpi*	'Sing!'
ABSENT IMPERATIVE	*mymýk púlkydi dákpajtipadà*	'Stick it in his door!'

Algonquian languages show especially rich modal paradigms. Verb inflections in these languages have traditionally been divided into three sets, called orders: the independent for clauses that can stand alone, the conjunct for dependent clauses, and the imperative for commands. Within each order is a set of modes. Examples in (3) are from Cheyenne, of Montana. Leman 1980 characterizes the uses of some of the modes as follows. Indicatives are for basic statements, usually about things the speaker has witnessed firsthand. Interrogatives are for questions. Dubitatives tend to be used to tone down an assertion. Attributives report information learned from someone else. Mediates give an impression of distance in space or time, so they often appear in legends and folktales. The organization of the Algonquian modal paradigm illustrates the fact that markers of subordination often appear in paradigms among other modal markers. The paradigm also shows a distinction, one seen above in Maidu and one that appears in a number of North American languages, between imperatives meant to be carried out immediately, and imperatives meant to be executed at a later time. The hortatives can occur not only in the third person, as below, but also the first, singular or plural: *nétanéméne* 'Let's eat!'

(3) CHEYENNE MODES — Leman 1980: 24-42

INDEPENDENT ORDER		
INDICATIVE	*épęhêvahe*	'he's good'
INTERROGATIVE	*épęhêvǫhe*	'is he good?'
DUBITATIVE	*mópęhêvǫhehe·he*	'I guess he's good'
ATTRIBUTIVE	*épęhêvǫhesęstse*	'he is said to be good'
MEDIATE	*éhpęhêvǫhêhoo'o*	'he was good'
CONJUNCT ORDER		
INDICATIVE	*tséhpęhêvaese*	'when he was good'
SUBJUNCTIVE	*mǫhpęhévaestse*	'when he is good (unrealized)'
ITERATIVE	*ho'pęhévaestse*	'whenever he is good'
SUBJUNCTIVE ITERATIVE	*ǫhpęhévǫhesęstse*	'when he is good (in general)'
PARTICIPLE	*tsépęhêvaestse*	'the one who is good'
INTERROGATIVE	*éópęhêvaestse*	'whether he is good'
OBLIGATIVE	*áhpəhêvǫhesęstse*	'he ought to be good'
OPTATIVE	*momóxepęhévaestse*	'I wish he would be good'
INTENSIVE NEGATIVE	*móho'nópęhevaestse*	'no doubt he is not good'
IMPERATIVE ORDER		
DIRECT		
IMMEDIATE	*méseestse*	'eat!'
DELAYED	*mésęheo?o*	'eat (later on)!'
HORTATIVE	*mésęheha*	'let him eat!'

3.9.2 *Realis and irrealis*

A grammatical distinction that appears in a number of North American languages is that between realis and irrealis. The realis portrays situations as actualized, as having occurred or actually occurring, knowable through direct perception. The irrealis portrays situations as purely within the realm of thought, knowable only through imagination. The realis/irrealis distinction may be marked in various areas of grammar, most often by particles, by clitics, or by verbal inflection. Sometimes only one member of the opposition is overtly marked. In these cases, the marked member is usually (though not always) the irrealis.

In Kiowa, of Oklahoma, four modes are distinguished by inflectional suffixes on verbs: indicative (unmarked), imperative, irrealis, and hearsay. The irrealis is *-t́ɔ́·* for intransitives and *-tɔ́·* for transitives (with low tone after low or falling tone). It marks unrealized events whatever their probability: certain (4a), possible (4b), or even counter to fact (4c). It also appears with obligations, conditions, and negative commands.

(4) KIOWA IRREALIS SUFFIX — Watkins 1984: 170-3

a. *èm-cán-t́ɔ̀·-nɔ̀* *hègɔ́* *yą́-mɔ́·kʰól-dɔ̀-t́ɔ̀·*
2SG-arrive-IRREALIS-and.DIFFERENT now 2SG/1SG/PL-ready-be-IRREALIS
'I'll have them ready for you when you come.'

b. *hàgyà* *à-bá·-t́ɔ́·*
perhaps 1SG-go-IRREALIS
'Maybe I will go.'

c. *mágyá* *à-bá·-t́ɔ́·*
might.but.not 1SG-go-IRREALIS
'I thought I might go but I didn't.'

d. *ǩyákômdà* *mâ·-ǫ̀·-dò* *kyǫ́ydé* *á-tʰày-dò·-tɔ̀·.*
life indeed-good-because longtime 3PL/SG-with-hold-IRREALIS
'Because life is so enjoyable, we ought to hang on as long as possible.'

e. *à-tʰǫ́·-tɔ́·* *gɔ̀* *à-tôl*
2SG/SG-find-IRREALIS and.SAME 2SG/SG-send.IMPERATIVE
'If you find him, send him here.'

f. *pòy* *té·* *mèn-tél-tɔ̀·*
PROHIBITIVE all 2SG/DU-tell-IRREALIS
'Don't tell them (dual) everything.'

The realis/irrealis distinction is often carried as a component of meaning of markers that express other functions, such as tense or aspect, clause linking or subordination, and even pronominal reference. A subtle but fundamental distinction can be seen in Takelma, a language of southwestern Oregon described in Sapir 1922. Every verb has six sets of inflectional paradigms, what Sapir terms 'tense-modes': an aorist, future, potential, inferential, present imperative, and future imperative. Each tense-mode has a distinct set of pronominal suffixes. Sapir describes their functions as follows (1922: 157-8). The aorist is used for past events, including the narrative past, the present, and the immediate future ('Now I shall go'). The future is used for 'future time distinctly set off from the present' ('I shall go this evening'). The potential 'implies the ability to do a thing, or the possibility of occurrence of a certain action or condition' ('I can/could go'). It often occurs with unfulfilled or contrary to fact conditions ('I could go if I cared to'), and is also used for negative imperatives (prohibitives). The inferential implies that an event 'is not directly known or stated on the authority of the speaker, but is only inferred from the circumstances of the case or rests on the authority of one other than the speaker'. It is also used for negative futures. The present imperative is used for commands meant to be carried out immediately, and the future imperative for those meant to be accomplished at some stated or implied point later in time, distinct from the present.

What is of interest here is the pattern of inflection. Each verb has two stem forms. The stems for 'run' are *yowo-* and *yu-*; those for 'come' are *baxam-* and *baxma-*; those for 'fight each other' are *sa·nsansan-* and *sanaxan-*. The first stem form is used only for what Sapir terms the aorist: past, present, and imminent events. The second stem form is used for the future, potential, inferential, and imperatives. The distinction is actually one of realis versus irrealis.

Languages of the Yuman family show irrealis suffixes, though the systems are not the same in all of the languages. In Mojave, a Yuman language spoken on the Colorado River in Arizona, suffixes *-θ* and *-h* mark subordinate clauses as irrealis, in contrast with other clause combining ('switch reference') suffixes used for realis clauses. Their effect can be seen by comparing the sentences in (5)a and b.

(5) MOJAVE REALIS AND IRREALIS — Munro 1974: 54

a. *ʔ-isay-θ* *ʔ-a·r-mot-m*
1-fat-IRREALIS 1-want-NEGATIVE-TENSE
'I don't want to get fat.'

b. *ʔ-isay-k* *ʔ-a·r-mpot-č*
1-fat-SAME.SUBJECT 1-want-NEGATIVE-STATIVE.TENSE
'I don't like being fat.'

The irrealis suffixes appear on subordinate verbs to mark unreal or hypothetical situations: desires, conditionals, obligations, counterfactuals, and occasionally futures.

(6) MOJAVE IRREALIS — Munro 1974: 54-5

a. *humi·č* *ʔatay* *iyu··-h a·r-pč*
children more have-IRREALIS-want-TENSE
'She wants to have more children.'

b. *huwalʲəpay* *ya-ʔ-aʔa·v-θ* *ʔ-ʔahot-e.*
Walapai x-1-understand-IRREALIS 1-good-FUTURE
'If I learn Walapai, I'll be all right.'

c. *ʔ-iyem-θ-č* *idu··-m*
1-go-IRREALIS-SUBJECT be-TENSE
'My unaccomplished going is' = 'I must go'

Munro (1974: 56) hypothesizes that the irrealis *-θ* may have developed from a Proto-Yuman demonstrative **s* indicating objects a distance away. The irrealis *-h* is cognate with suffixes of the form *-x* in other languages for unreal and unaccomplished actions.

Alsea, a language formerly spoken on the Oregon coast, shows a realis/irrealis distinction in both complementizer particles and aspectual suffixes. There are two complementizer particles, realis *mis* and irrealis *sis*. Their uses can be seen in (7).

(7) ALSEA REALIS AND IRREALIS COMPLEMENTIZERS — Buckley 1988: 12, 19, 13

a. *temúɬhu* *mis=axa* *wi·l-x*
and.then REALIS.COMPLEMENT=back come-REALIS.COMPLETIVE
'And then after she came back . . .' Frachtenberg 1920: 154.10

b. *mís=iɬx* *múɬhu·* *ɬáq̓-s-t-əx*
REALIS.COMPLEMENT=3PL.SUBJECT at.last CROSS-X-REALIS.STATIVE.COMPLETIVE
'When they finally got across . . .' Frachtenberg 1920: 134.28

c. *sips* *tqaiáld-i·*
IRREALIS.COMPLEMENT.2PL.SUBJECT want-IRREALIS.COMPLETIVE
'If you desire it . . .' Frachtenberg 1920: 24.3

d. *i·mst tém-in* *tqaiált-əx* *sis* *kexk-ái··-m*
thus and=1SG.SUBJ want-R.CMPL IRR.COMPLEMENT assemble-IRR.INCH-INTR
'For that reason I want [the people] to assemble.' Frachtenberg 1920: 42.26

The realis/irrealis distinction is often carried as a component of meaning of markers that express other functions, such as tense or aspect, clause linking or subordination, and even pronominal reference. A subtle but fundamental distinction can be seen in Takelma, a language of southwestern Oregon described in Sapir 1922. Every verb has six sets of inflectional paradigms, what Sapir terms 'tense-modes': an aorist, future, potential, inferential, present imperative, and future imperative. Each tense-mode has a distinct set of pronominal suffixes. Sapir describes their functions as follows (1922: 157-8). The aorist is used for past events, including the narrative past, the present, and the immediate future ('Now I shall go'). The future is used for 'future time distinctly set off from the present' ('I shall go this evening'). The potential 'implies the ability to do a thing, or the possibility of occurrence of a certain action or condition' ('I can/could go'). It often occurs with unfulfilled or contrary to fact conditions ('I could go if I cared to'), and is also used for negative imperatives (prohibitives). The inferential implies that an event 'is not directly known or stated on the authority of the speaker, but is only inferred from the circumstances of the case or rests on the authority of one other than the speaker'. It is also used for negative futures. The present imperative is used for commands meant to be carried out immediately, and the future imperative for those meant to be accomplished at some stated or implied point later in time, distinct from the present.

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REALIS.COMPLEMENT=3PL.SUBJECT at.last cross-X-REALIS.STATIVE.COMPLETIVE
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thus and=1SG.SUBJ want-R.CMPL IRR.COMPLEMENT assemble-IRR.INCH-INTR
'For that reason I want [the people] to assemble.' Frachtenberg 1920: 42.26

Two sets of aspectual suffixes on verbs, which Buckley identifies as inchoatives and completives, also distinguish realis and irrealis clauses. There is a realis inchoative *-ai·*, an irrealis inchoative *-aa*, a realis completive *-(ə)x*, and an irrealis completive *-i·*. The realis completive *-(ə)x* appears in the realis examples (7)a and b above. The irrealis completive *-i·* appears in (7)c. The irrealis inchoative *-ai·* appears in (7)d.

Central Pomo, like other languages of the Pomoan family in northern California, shows a realis/irrealis distinction on verb-final markers used to link clauses (Mithun 1995a). The markers are paired, one used to link clauses representing what are portrayed as elements of the same event (SAME), the other to link those representing what are viewed as distinct events (DIFFERENT). The forms of the markers are in (8).

(8) CENTRAL POMO CLAUSE LINKERS — Mithun 1995a: 368

		SAME	DIFFERENT
IRREALIS	'while', 'and', 'then'	*-hi*	*=hla*
REALIS			
SIMULTANEOUS	'and', 'while', 'as'	*-in*	*=da*
SEQUENTIAL	'and', 'then'	*-ba*	*=li*

The irrealis markers appear in imperatives (9a below), hortatives (b), futures (c), obligations (d), conditionals (e), and counterfactuals (f): constructions portraying situations knowable only through imagination. Speakers cited here are Eileen Oropeza (a), Frances Jack (b-e), and Kate Daniels (f).

(9) CENTRAL POMO CLAUSE LINKERS IN CONTEXT — Mithun 1995a: 370-1

a. *Qʰá čʰni·=ʔel dó-č-hi*
water bread=the make-SEMELFACTIVE-SAME.IRREALIS
'Make the water bread and

mú·ṭuya-l qa·-wá-·č̣-ka-m
3PL-PATIENT biting-go-IMPERFECTIVE.PL-CAUSATIVE-IMPERATIVE
invite them to eat it.'

b. *Yá=ka háy š-dí-č-ma-hi*
1PL.AGENT=INFER wood dragging-carry-INCHOATIVE-CO.AGENCY-SAME.IRREALIS
'Let's get some wood and

qʰá=kay š-dí-č-ma-w=ʔkʰe.
water=too dragging-carry-INCHOATIVE-CO.AGENCY-PERFECTIVE=FUTURE
haul in some water.'

c. *ɬénṭa=lil wá-·n-hi, ʔa· qó=be-w=ʔkʰe.*
town=to go-IMPRF-SAME.IRREALIS 1AGENT toward=carry-PRF=FUTURE
'I'll bring it back on my way from town.' ('I'll go to town and bring it back.')

d. *čá-w=ḥṭow ʔé·y=yo-hi ɬáwhal da-čé·=ʔle.*
house-LOC=from away=go-SAME.IRREALIS work handling-catch=COND
'He should leave home and get a job.'

e. *Wá·-q-hi ʔe ló-·h-du-w=ʔkʰe.*
go-level-SAME.IRREALIS COPULA help-IMPRF-IMPRF-PRF=FUTURE
'If I go I'll be helping out.

f. *Me·n mí=hla, mu·l ʔa· ʔʰá·-·ʔle ʔa·*
so say=DIFF.IRREALIS that 1AGENT sit-COND 1AGENT
'If she'd said that I'd say longer. [But she said . . .]'

The realis counterparts link past or present events. Speakers in (10) were Frances Jack (a) and Florence Paoli (b).

(10) CENTRAL POMO REALIS LINKERS IN USE — Mithun 1995a: 371-2

a. *ʔa· Edna=ṭo čá=·l yó-·h-du-ṇ*
1AGENT Edna=PATIENT house=to go-PRF-IMPRF-SAME.SIMULTANEOUS.REALIS
'I go to Edna's house and

hínṭil=ʔel ča·nó-·d-an=ya mú·ṭu
Indian=the talk-IMPRF-IMPRF=PERSONAL.EXPERIENCE 3PATIENT
talk Indian to her.'

b. *ṭo· meɬ ʔ-né·-ya-w=li*
1PATIENT such by.gravity-set-DEFOCUS-PRF=DIFFERENT.SEQUENTIAL.REALIS
'I was nominated and

míya· mé dá-·ʔ-du-w čʰó-w.
3POSSESSIVE father like-REFLEXIVE-IMPRF-PRF not-PRF
his father didn't like it.' ('When I was nominated, his father didn't like it.')

The clauses bearing the linkers are grammatically dependent, since they cannot stand alone as independent sentences, but they are not necessarily subordinate semantically, as can be seen from their translations.

In Caddo, a Caddoan language spoken in Oklahoma, the realis/irrealis distinction is encoded in pronominal prefixes on verbs (Chafe 1995). There are two sets of pronominal prefixes, one for realis clauses and the other for irrealis. First, second, third, and indefinite third persons ('one') are distinguished.

(11) CADDO REALIS AND IRREALIS PRONOMINAL PREFIXES — Chafe 1995: 352

REALIS	AGENT	PATIENT	BENEFICIARY
1	*ci-*	*ku-*	*ku-*
2	*yah?-*	*si-*	*si-*
3	--	--	*nu-*
INDEFINITE	*yi-*	*ya-*	*yu-*
IRREALIS			
1	*i-/ti-*	*ba-*	*ba-*
2	*sah?-*	*sa?a-*	*sa?u-*
3	*sa-*	*sa-*	*?u-*
INDEFINITE	*?a-*	*?a?a-*	*?a?u-*

The irrealis pronouns are used in several contexts. They appear in yes/no questions, which are otherwise unmarked. Question-word questions use the realis forms.

(12) CADDO PRONOUNS IN QUESTIONS — Chafe 1995: 354

sàyybáwnah	*dikadàyybáwnah*
sah?-yibahw-nah	*dikat-yah?-yibahw-nah*
2AGENT.IRREALIS-see-PERFECT	what?-2AGENT.REALIS-see-PERFECT
'Have you (IRREALIS) seen him?'	'What have you (REALIS) seen?'

As Chafe points out, the yes/no question implies a lack of knowledge of whether the seeing actually occurred, while the question-word question presupposes that it did.

The irrealis pronouns appear in a number of other constructions marked with prepronominal prefixes. They include negation of various kinds ('not', 'not yet', 'not anymore', 'not for a long time'), prohibitions, obligations, conditions, negative conditions, and simulatives 'as if'.

(13) CADDO IRREALIS PRONOUNS IN OTHER CONTEXTS — Chafe 1995: 354-7

kúyi-táybah	*kaššáy?bah*
kúy-i-ta-yibahw	*kaš-sah?-yibahw*
NEGATIVE-1AGENT.IRREALIS-see	PROHIBITIVE-2AGENT.IRREALIS-see
'I don't see him'	'Don't look at it!'

kassánáy?aw	*hi-i-táybah*
kas-sa-náy?aw	*hí-i-tá-yibahw*
OBLIGATIVE-3AGENT.IRREALIS-sing	CONDITIONAL-1AGENT.IRREALIS-see
'he should/is supposed to sing'	'if I see it'
nadús-i-táybáw?a?	*dúy-i-táybah*
nadús-i-ta-yibahw-?a?	*dúy-i-ta-yibahw*
NEGATIVE.CONDITIONAL-1AGENT.IRREALIS-see	SIMULATIVE-1AGENT.IRREALIS-see
'if I don't see it'	'as if I saw it'

The semantic distinction underlying all of these systems is the same. Yet it is interesting that languages do not always classify all constructions in exactly the same way. Some constructions, such as conditionals and counterfactuals, are classified as irrealis in all systems. Imperatives, futures, questions, and negatives, however, are classified as realis in some languages but as irrealis in others. The differences are due to discrepancies not in the underlying distinction, but rather in its application.

Imperatives are classified as irrealis in Central Pomo (9a), but as realis in Caddo. Several kinds of situations could bring about such a difference. The distinction could develop first in indicative clauses, then spread only later into other contexts such as the imperative. Systems in which imperatives are classified as realis could represent this intermediate stage of development. Alternatively, there could be differing expectations concerning the actualization of commands. In some cultures imperatives could be seen to imply reasonable expectations of compliance, and in others not. The difference can be exploited for pragmatic purposes. Some languages provide two options: a polite imperative in the irrealis and a strong imperative in the realis.

Jamul Diegueño, a Yuman language of southern California, contains an irrealis suffix *-x* cognate with the Mojave *-h* mentioned above. A. Miller (1990: 119) reports that it appears with counterfactuals, conditionals, potentials, obligations, warnings, desideratives, and futures, as well as in adversative, purpose and hypothetical relative clauses and nominalizations, all prototypical irrealis contexts. Jamul contains two imperative constructions, a polite one with irrealis marking, and a strong one without.

(14) JAMUL DIEGUEÑO IMPERATIVES — A. Miller 1990: 119

nya-m-mápa-pu	*m-rar-x-s*	*k-naw*
INDEFINITE-2-NM.want-DEM	2-do-IRREALIS-EMPH	2-run
'Do whatever you want.' (polite)		'Run!' (basic)

Futures show a similar alternation in classification. The Central Pomo future seen in (9c) was classified as irrealis, but in Caddo, futures are classified as realis. In

Central Pomo, the distinction is actually exploited to mark differences in expectation. Most futures are categorized as irrealis, but (15) provides examples of futures as realis. The speaker was relating her mother's words to her when she was a child. The choice of realis marking indicated no doubt about the probability of the daughter becoming older and of the mother then no longer being alive.

(15) CENTRAL POMO REALIS FUTURES — Frances Jack, speaker

šé·	*ʔul*	*ma,*	*yém-aq̓=da,*	*ʔa·*	*čʰó-w=da,*	
long	already	2AGT	old-INCH.PRF=DIFF.SIM.REALIS	1AGT	not-PRF=DIFF.SIM.REALIS	

'In the future, when you are older, when I am no longer here,

ma	*ʔyá-·q-an-ka-w=ʔkʰe.*
2AGENT	KNOW-INCHOATIVE-IMPRF-CAUSATIVE-PRF=FUTURE

you will remember.'

In some languages, including Central Pomo, interrogation and negation have no effect on reality classification. Questions about hypothetical situations are categorized as irrealis, while questions about actualized events are realis, in the same way as their declarative counterparts. Similarly, negative constructions show the same reality classification as their positive counterparts. In other languages, including Caddo, all questions and negatives are automatically irrealis. Again, the difference is not in the nature of the distinction. Here it is a question of scope. In languages like Central Pomo, the reality classification is made in a sense before the proposition is questioned or negated, independently of them. In languages like Caddo, the full question or negative statement is classified for reality as a unit.

The difference can be illustrated by comparing two Central Pomo questions.

(16) CENTRAL POMO REALIS AND IRREALIS QUESTIONS — Mithun 1995a: 381

a.

ʔí=wa	*ma*	*šačóɬ=ʔkʰe*	*ya-l*	*ča-·l*	*démma-hi?*
be=Q	1AGT	swinging-whip=FUT	1PL-PAT	home-PAT	take-SAME.IRREALIS

'Are you gonna whip us when you take us home?'

b.

ɬʰaná	*da·-sé·č-ba=wa*		*ma*	*ʔé·*	*čʰʔólk̓aw?*
hand	handling-wash-SAME.SEQ.REALIS=Q		2AGT	hair	comb.PRF

'Did you wash your hands and comb your hair?'

In (16)a, the proposition is classified as irrealis since it is future ('you will whip us'); this irrealis proposition is then questioned. In (b), the proposition is realis, because it is past ('you washed your hands'); this realis proposition is then questioned.

3.9.3 *Evidentials*

If one were to ask a Central Pomo speaker how to say 'it rained', the answer would probably be *čʰé mul*, literally 'rain fall'. Yet such a sentence is rarely heard in natural speech. Speakers normally include a specification of the evidence on which such a statement is based. Central Pomo includes a set of evidential enclitics that provide such information: *=ʔma* for general knowledge, *=ya* for firsthand personal experience, usually visual, *=ʔdoma*/*=ʔdo·* for hearsay evidence, *=nme·* for auditory evidence, *=ʔka* for inference, *=la* for the personal experience of one's own action, and *=wiya* for personal affect. Examples can be seen in (17).

(17) CENTRAL POMO EVIDENTIALS — Frances Jack, Salome Alcantra speakers

čʰé mul=ʔma	'it rained'	(That's an established fact.)
čʰé mul=ya	'it rained'	(I know because I was there and saw it.)
čʰé mul=ʔdo·	'it rained'	(I was told.)
čʰé mul=nme·	'it rained'	(I heard the drops on the roof.)
čʰé mul=ʔka	'it must have rained'	(Everything is wet.)

da-čé-w=la	*da-čé-w=wiya*
pulling-seize-PRF-PERSONAL.AGENCY	pulling-seize-PRF=PERSONAL.AFFECTEDNESS
'I caught it'	'I got caught'
(I know because I did it)	(I know because it happened to me)

Samples of their use in conversation are in (18).

(18) CENTRAL POMO EVIDENTIALS IN CONTEXT — Frances Jack, speaker

Kʰe	*ɬʰé=ʔel*	*ɬo·*	*ní·n*	*mí-h-du-w-an=ya*
my	mother=the	1.PAT	so	say-SML-IMPRF-PRF-IMPRF=PERSONAL.EXPERIENCE

'My mother used to tell me . . .'

Sí·n=wa=ka	*mu·l,*	*ɬé·l-ɬa-w?*	
how=Q=INFERENTIAL	that	finish-MULTIPLE.EVENT-PRF	

'How [far along] do you suppose it is, finished?'

q̓di	*ba-yúʔ-či-ba=ʔti*	*ʔdoma*	*šʔúd-aq̓-č̓-w*	
good	orally-begin-SML-and=but	HEARSAY	not.know-INCHOATIVE-SML-PRF	

'It seems he started out good, but then he forgot how (to speak the language).'

Other languages of the Pomoan family contain similar systems. A description of evidential marking in Kashaya Pomo is in Oswalt 1986.

Such systematic specification of the source and/or reliability of information is not uncommon in North American languages. In many languages it is well integrated into the grammar, carried by paradigms of verbal suffixes, enclitics, or particles. In others, evidentiality is expressed in several different areas of the grammar. A survey of early work on the category is in Jacobsen 1986.

Semantic relations between knowledge and evidence are easy to see. Specification of the evidence for a statement can imply a certain degree of reliability. In fact evidentiality is often encoded in grammar among other markers of epistemic modality. Describing Hanis, a Coos language of the Oregon coast, Frachtenberg 1922 lists a set of 'particles denoting degrees of certainty and knowledge', essentially a set of modal particles. Particles with evidential meaning are included as part of the set.

(19) HANIS COOS MODAL PARTICLES WITH EVIDENTIALS — Frachtenberg 1922: 385-8

kwa	'it seems, as if, like, kind of'
yîku, kʷ	'maybe, perhaps, I guess'
hakwał, kwał	'it seems, as if'
qɛ̂n	suspicion
qaiku	supposition
qaini·	sudden recollection, 'Oh, I recollect'
natsi·	'I doubt'
hɛ̂n	hearsay, 'I was told, it is said'
îl	'surely, certainly'
cku	knowledge by evidence, 'it must have been that'

Other grammarians have treated evidentiality as distinct from modality, usually in accord with its distinct formal expression in individual languages. Pawnee, a Caddoan language now spoken in Oklahoma, shows well-developed systems of modality and evidentiality. Parks reports that all verb forms must be inflected for mode (1976: 147-63). The modal prefixes include an indicative *ta-/ti-* for simple statements of fact and instructions; a negative indicative *ka:ka:-/ka:ki:-*; an assertive *re:-* for emphasis; an imperative *Ø/ri:-*; a contingent/conditional *(r)i-* used in independent clauses for futures, resultatives, and requests, and in dependent clauses as a conditional; a potential *kus-i-* for futures and possibility, potentiality, and probability; an absolutive/gerundial *ra-* used in independent clauses in narrative, interrogatives (with interrogative prefixes), and for pointing out objects, and in dependent clauses for nominalization and participles; a subjunctive *a:-/i:-* for wishes, desires, hypotheticals, and contrary-to-fact statements; an infinitive *ra-ku-* for verbal complements of verbs of thinking, feeling, desiring, and for mild commands; and a desiderative formed from a combination of markers.

Pawnee also contains four evidential prefixes: a hearsay *wi-*, an inferential *tir-*, a prefix *ar-* indicating that the speaker was not an eyewitness to an event or state, and a dubitative *kur-/kuruh-* indicating that the speaker did not actually see an event or state and that there is an element of doubt concerning its occurrence (Parks 1976: 226-32). The evidential prefixes form a separate system from the modal prefixes, but they interact closely with them. They are adjacent in the prefix morphology and exhibit specific cooccurrence relations. No evidentials cooccur with the assertive mode. The hearsay evidential *wi-* cooccurs only with the indicative mode, the inferential *tir-* and dubitative *kur-* only with the absolutive mode, and the dubitative *kuruh-* only with the contingent mode. The evidential *ar-* may precede or follow the contingent and absolutive modes, but it must follow all others. When it precedes them, it marks a past activity or one that has already begun. When it follows them, it indicates an unrealized activity. Other modal-evidential combinations also yield special meanings.

Evidential distinctions similar to those of Central Pomo and Pawnee appear in many languages. Evidentials in Wintu, a Wintun language of Northern California, were first noted by Lee (1938, 1941, 1944a,b, 1950), further described by Pitkin (1984) and examined in detail by Schlichter (1986). There are four evidential suffixes. The suffix *-ntʰe·* (or one of several alternate forms) is used for nonvisual sensorial evidence, to indicate that the speaker knows a fact through 'hearing, touch, taste, smell, or any kind of intellectual experience of "sixth sense". It is used for talking about the supernatural (Lee 1941) and for prophecy; for predicting future events which are somehow felt as being imminent.' (Schlichter 1986: 47)

(20) WINTU NONVISUAL EVIDENCE — Schlichter 1986: 47-8

a. *Heket wira wača·-bi-ntʰe·m.*
someone come cry-IMPRF-SENSORY.EVIDENTIAL-DUBITATIVE
'Someone is coming crying.' (I hear)

b. *ǫotisa-bi-ntʰere-sken.*
strong-IMPERFECTIVE-SENSORY.EVIDENTIAL-you
'You're strong!' (said while wrestling) (I feel)

c. *Po·m yel-hurawi-ntʰe·-m.*
earth destroy-SEQUENTIAL-SENSORY.EVIDENTIAL-DUBITATIVE
'The earth will be destroyed.' (I know, feel)

There is a hearsay suffix *-ke·* and an inferential *-re·*.

(21) WINTU HEARSAY AND INFERENTIAL EVIDENTIALS — Schlichter 1986: 49

a. *ḱilepma·* *kaya·-bi-ke·* *mi.*
frightfully sick-IMPRF-HEARSAY.EVIDENTIAL you
'Frightfully sick you are (I hear).'

b. *Hida* *ḱaysa-re·* *yo·!*
very hurry-INFERENTIAL.EVIDENTIAL EXCLAMATION
'He must be in a great hurry!' (I see him run)

The fourth evidential *-ʔel* 'denotes that the speaker believes his proposition to be true because of his experience with similar situations, regular patterns, or repeated circumstances common in human life' (Schlichter 1986: 52).

(22) WINTU EXPECTATIONAL EVIDENTIAL — Schlicter 1986: 52-3

Tima *minel-ʔel* *pira·-ʔel.*
cold die-EXPECTATIONAL starve-EXPECTATIONAL
'He might freeze to death, he might starve.' (as it's cold, he's alone, helpless, sick)

Schlichter shows that the evidential system is a recent development in Wintu. Only the non-visual evidential *-nt^{h}e·* has an evidential cognate in the single surviving related language, Patwin (Whistler 1986).

Probably the most common evidentials are hearsay markers like the Central Pomo *=ʔdo*, Hanis *hɛ̄n*, and Wintu *-ke·* 'they say', 'it is said', 'I've heard'. Prototypical hearsay evidentials, which indicate verbal evidence from unspecified persons, are distinct from quotative markers used in citing the words of a specific speaker. Both may contrast with auditory evidentials indicating evidence of a non-verbal nature, like the Central Pomo *=nme·* used if one hears footsteps outside ('They're here!'), or a baby crying ('He must be awake'). In some languages, however, hearsay, quotation, and/or auditory evidence are expressed with the same or related forms. Koasati, a Muskogean language spoken in Louisiana and Texas, contains a set of verbal suffixes with evidential functions. They include an inferential *-:li-*, a dubitative of observation *-má:s* ('The chicken is perhaps finally dead', spoken while watching it die), a combination hearsay/quotative *-mpa-*, and an auditory *-ha(wa)-*.

(23) KOASATI HEARSAY/QUOTATIVE AND AUDITORY — Kimball 1991:204-7

a. *cokfa:łihilkón* *immámkalá:himp*
cokfa:łihilk-ón *im-mánka-l-á:hi-mp*
rabbit.story-OBJECT 3SG.DATIVE-tell-1SG.AGENT-INTENTIVE-QUOTATIVE
'He says that I should tell him a traditional narrative.'

b. *wáykat* *nakáłtoho:limpak* *copokłinitkák*
wáyka-t *nakáłła-toho-:li-mpa-k* *copokłinitká-k*
fly.SG-CONNECTOR go.off.SG-REALIS-INFERENTIAL-HEARSAY-PAST hummingbird-SUBJECT
'Hummingbird (must have) flown off, (so it is said).'

c. *nipók* *aksóhkaha*
nipó-k *aksóhka-ha*
meat-SUBJECT char-AUDITORY
'(It sounds like) the meat is charring.'

The Central Pomo hearsay evidential *=ʔdo(ma)* is related to the quotative marker *do·* used in conveying the words of a specific individual.

Though hearsay evidentials generally carry the same meaning cross-linguistically, their implications can differ subtly across contexts and cultures. Elizabeth Ali, a speaker of Central Alaskan Yup'ik, points out (p.c. 1997) that the Yup'ik hearsay *=gguq* often adds credibility to what is related; the speaker is indicating that the information is not simply his or her own invention. Kaia'tikahkhe Jacobs, a speaker of Mohawk, notes that the Mohawk hearsay evidential *iá:ken* can have the opposite effect, distancing the speaker from responsibility for the truth of the information.

Jacobsen 1986 provides an intricate discussion of the diachronic development of evidentials in the Wakashan languages of the Pacific Northwest, taking as a point of departure a language of the Southern branch, Makah, spoken on the northwest tip of the Olympic Peninsula in Washington State. An outer layer of modal suffixes contains such markers as an interrogative, imperative, subordinative, conditional, and counterfactual as well as various evidentials. The suffixes are mutually exclusive.

(24) MAKAH EVIDENTIAL SUFFIXES — Jacobsen 1986

-wa:t	hearsay
-ƛ̓a	non-indicative hearsay (in interrogatives, subordinates, counterfactuals)
-q̓adi	auditory
-caqiɬ	uncertain visual evidence, as trying to make out something at a distance
-pi:t	inference from physical evidence
-χa: .. -š	inferred probability

hi·dawʔaƛ̓wa·d	'I hear he found it'	(*hi·dawʔal*	'he found it')
pu·pu·q̓adʔi	'he's blowing a whistle'		
ƛ̓apaccaqil	'it looks like a canoe'	(*ƛ̓apaƛ̓*	'it's a canoe')
haʔuƛ̓aƛ̓pi·dic	'I see you ate'	(*haʔuƛ̓alic*	'you're eating')
dudu·ƛ̓aƛ̓xa·š	'he's probably singing'	(*dudu·ƛ̓al*	'he's singing')

Jacobsen traces the Makah hearsay suffix *-wa:t* to a verb *wa·* 'say' with passive suffix *-ʔit* yielding a form along the lines of 'I am told'. It has cognates in the other Southern languages Nootka and Nitinat. Swadesh (1948: 116) compares the hearsay suffix of Kwakwala, a Northern language, to the word *ƛaqʷəla* 'to shout' and the suffix *-laqʷəla* 'to talk about'. Jacobsen relates the auditory *-q̓adi*, which is also used for other non-visual senses, to suffixes deriving names of sounds or the making of them in all of the Southern languages: Makah *ƛiƛi·čq̓ad* 'a creaking sound', Nitinat *hihid'ad* 'noise of dogs growling', Nootka *bucubuxaqe·ʔid* 'a bear is making a noise'. He compares the Makah uncertain visual evidential *-caqiƛ* to the Nootka suffix *-caq* 'paying attention to' plus a momentaneous aspect marker *-iƛ*. A possible source for the physical inferential *-pi:t* is the passive of a stem **pi·-* 'to observe'.

Makah also contains a set of suffixes that have not progressed as far toward status as pure evidentials. The Wakashan languages contain hundreds of suffixes, many with meanings similar to those of noun and verb roots in other languages. Among them are a suffix *-ckʷi·* that derives nominals meaning 'debris, remains of', a suffix *-ƛ̓uk* that adds the meaning 'looks like', and a suffix *-p̓aɬ* that means 'taste, smell'.

(25) Some Makah lexical suffixes — Jacobsen 1986: 21-3

čit-ckʷi	'sawdust'	(*čit-*	'to saw')
ƛ̓uχ-cki	'skull'	(*ƛ̓uχ-*	'head')
c̓ic̓iyup-ƛ̓uk	'spaghetti, macaroni'	(*c̓iyup-*	'intestines': 'looks like int.)'
χaχaš-ƛ̓uk	'hardtack, crackers'	(*χaš-*	'bone': 'looks like bones')
ciχi·-p̓aɬ	'it's sour'	(*ciχ-*	'sour')
č̓u-p̓aɬ	'it stinks'	(*č̓u-*	'to stink')

All have cognates in Nitinat and Nootka, with comparable meanings. In some contexts the Makah suffixes function somewhat like evidentials.

(26) Makah lexical suffixes in evidential function — Jacobsen 1986: 20-3

bukwač-ckʔi	'it was a deer' (when seeing tracks)	*bukwač̓*	'it's a deer'
ƛ̓a·ci·wiƛ̓ƛ̓uwic	'you look like you're getting fat'	*ƛ̓a·ci·wʔalic*	'you're getting fat'
ba·dawi·-p̓aɬ	'it smells like smelt'	*ba·dawi·ʔ*	'it's a smelt'

As Jacobsen notes, the development of evidentials from lexical suffixes involves 'a kind of semantic subordination, where the focus of the predication shifts from the suffix to the stem, the suffix coming to provide merely a kind of epistemological orientation'. (1986: 24-5). It is this capacity for backgrounding the specification of the evidence that distinguishes languages with grammatical evidentials from those without.

4

Sentences

Simple sentences usually convey the idea of an event or state: *I found the leak*; *Your dress is gorgeous*. They typically consist of two basic parts: a predicate representing the event or state (*found*, *is gorgeous*), and one or more arguments identifying the people or objects involved (*I*, *the leak*, *your dress*). Most often the predicate is a verb or verb phrase, and the arguments are nouns, pronouns, or larger noun phrases.

Sentences with such structures are easy enough to find in North America. The sentence in (1) from Central Pomo, a Pomoan language of northern California, contains a predicate (the verb *lówač̓* 'speak') and two arguments (the noun phrase *masá·n čanú ʔel* 'English' and the pronoun *máya* 'you').

(1) Central Pomo simple sentence — Frances Jack, speaker

Masá·n	*čanú=ʔel*	*šk̓e*	*máya*	*lówač̓*
whiteman	word=the	only	you.all	speak

'You just speak English.'

Structures such as this are relatively rare in many North American languages, however. Syntactic patterns in many of these languages call into question some of the most fundamental assumptions about basic syntactic structure.

4.1 Predicates and arguments

We generally give little thought to how speakers distribute information between predicates and arguments. The choice usually appears to be semantically based, with events and states expressed in predicates, and persons, animals, or objects identified by arguments. A subtly different principle of clause organization can be seen in languages of the Wakashan family, spoken on the coast of British Columbia. Examples cited here are from Nuu-chah-nulth or Nootka, spoken on the west coast of Vancouver Island. The Ahousaht dialect is described in Nakayama 1997, and the Kyuquot dialect in Rose 1983. The basic order of constituents in Nootka is predicate-initial. As in other languages, predicates typically represent events and states.

(2) NOOTKA PREDICATE-INITIAL CLAUSE — George Louie to Nakayama p.c. 1994

ʔacši?aɬqu:č	*ča:kupi:ḥ*
ʔac-ši-'aɬ-qu:-č	*ča:kupi:ḥ*
go.out.hunting-MOMENTANEOUS-TEMPORAL-CONDITIONAL-INFERENTIAL	men

'Men would go out hunting.'

Often, however, predicates represent information that would be conveyed by other kinds of constituents in other languages. In (3) 'early' is expressed by the predicate, though it is conveyed by an adverb in the English translation. The earliness was the primary point of this clause; the work was already part of the discussion.

(3) NOOTKA PREDICATE CHOICE: TIME — Nakayama 1997: 88

hu:ʔakʔaɬqu:s	*mamu:k*
hu:ʔak-'aɬ-qu:s	*mamu:k*
early-TELIC-CONDITIONAL.1SG	working

'I would work early.'

The predicate in (4) is 'only'. The sentence comes from a legend told to Nakayama by speaker George Louie, in which hunters never invited a young man to eat with them. He was left to eat alone with his mother. At this point the idea of eating had already been introduced; the significant new information was his separateness.

(4) NOOTKA PREDICATE CHOICE: QUALIFIER — George Louis to Nakayama p.c. 1994

ʔa:nu:ʔaɬqu:č	*haʔuk*	*ʔumʔi:qsak.*
ʔana-u:-'aɬ-qu:-č	*haʔuk*	*ʔumʔi:qsu-ʔa·k*
only-X-TEMPORAL-CONDITIONAL-INFERENTIAL	eat	mother-POSSESSIVE

'He used to eat alone with his mother.'

Quantifiers often present key information; they appear accordingly as predicates.

(5) NOOTKA PREDICATE CHOICE: QUANTIFIER — Nakayama 1997: 82

mu:ʔaɬqu:	*maʔayiɬ*	*hi:ɬ*
mu:-'aɬ-qu:	*maʔayiɬ*	*hi:ɬ*
four-TELIC-CONDITIONAL.3	family	there.in.house

'There used to be four families living in the house.'

Certain predicate choices are routinized. The primary point of negative statements is often the negation itself. Negative constructions are routinely formed with initial negative predicates, as in (6).

(6) NOOTKA NEGATION — Nakayama 1997: 150, Rose 1983: 103

wiḱaɬ	*haʔukšiɬ*	*wikʔi·š*	*taʔiɬ*
wik-'aɬ	*haʔuk-šiɬ*	*wik-ʔi·š*	*ta-ʔiɬ*
not-TELIC	eat-MOMENTANEOUS	not-INDICATIVE	drift-in.house

'He did not eat.' 'She's not sick.'

The focus of content questions is the information requested: these questions are formed with initial interrogative predicates.

(7) NOOTKA CONTENT QUESTION — Nakayama 1997: 148

ʔaqishẃiłasʔaɬitḥ	*suẃa*	*ʔinmi:čiɬ*
ʔaqish-ẃiłas-'aɬ-it-ḥ	*suẃa*	*ʔinmi-ʔi-čiɬ*
why-about.to-TELIC-PAST-INTERROGATIVE	you	snail-INCHOATIVE

'Why would you become a snail?'

Predictably, the requested information is conveyed in the predicate of answers.

These sentence structures reflect a subtly different principle of clausal organization than that of many other languages. Cross-linguistically, predicates usually function to move communication ahead. The most newsworthy information is typically an event or state, the most dynamic element of a situation, the most subject to change over time. This typical semantic link between events/states and newsworthiness has been routinized in most languages so that events and states are automatically packaged as predicates. The Wakashan languages show patterns of clause organization that more closely reflect the pragmatics of the immediate discourse situation. That information which is most newsworthy at that point in the discourse is conveyed in the predicate.

Basic sentence structure in certain North American languages differs in another way from common expectations. As noted above, basic clauses are usually assumed to consist of a predicate (usually a verb) and one or more arguments (noun phrases), like the Central Pomo example in (1) 'You just speak English' and the Nootka example in (2) 'Men would go out hunting'. In a number of languages, the full clause structure is expressed within the verb, which may constitute a full clause in itself. In these languages, verbs contain pronominal prefixes or suffixes specifying their core arguments, the major participants involved in the situation. The pronominal affixes function much like English unstressed pronouns: they are fully referential pronouns in their own right. Pronominal prefixes can be seen in the verbs in (8) from Tuscarora, an Iroquoian language of New York State and Ontario. The prefix *hrak-* is used for the combination 'he/me' and *-hskwa-* for 'you/us'.

(8) TUSCARORA PRONOMINAL PREFIXES — Elton Greene, speaker

wahrakyétkaht	*wahskwátkaht*
wa?-hrak-etkaht-?	*wa?-hskwa-etkaht-?*
FACTUAL-he/me-chase-PRF	FACTUAL-you/us-chase-PRF
'He chased me.'	'You chased us.'

The pronominal prefixes differ from English unstressed pronouns in that they occur with every verb, even when there is an independent nominal in the sentence as well.

(9) TUSCARORA PRONOMINAL PREFIXES WITH NOMINAL — Elton Greene, speaker

rą́:kwe	*wahrakyétkaht*
r-ąkwe	*wa-hrak-etkaht-?*
MASCULINE-person	FACTUAL-he/me-chase-PRF
'A man chased me.'	

It is important to note that pronominal affixes like those in Tuscarora are not simply 'agreement markers' equivalent to the concordial suffixes on adjectives like the French *la petite fille* 'the.FEMININE little-FEMININE girl.FEMININE'. Pronominal affixes may agree with nouns in the sense that both may reflect the gender and number of their common referent: both the pronominal prefix *hrak-* 'he/me' and the noun *rą́:kwe* 'man' in (9) contain masculine singular markers. The pronominal prefixes are not simple copies of features, however. In fact more often than not there is no noun in the clause to copy features from. Even when independent nominals are present in the clause, the pronominal prefixes carry more distinctions than the nominals. Nouns carry no case, but the pronominal prefixes do. The word *rą́:kweh* 'man' could be used as a grammatical agent, a patient, or a possessor. The prefix *hra-*, however, is in the agent case. Like other languages with pronominal affixes, Tuscarora does contain independent pronouns, but they are not equivalent in function to English unstressed pronouns. They occur only to emphasize a contrast with expectation or a shift in topic: *ʔí:* 'as for me/us'. Like nouns, they carry fewer distinctions than the pronominal prefixes. The contrastive pronouns distinguish person and gender, but the pronominal prefixes distinguish person, gender, case, number (singular, dual, plural), and inclusive versus exclusive first person.

Because every Tuscarora verb contains pronominal prefixes referring to its core arguments, every verb can function as a grammatical sentence alone. Sentences often consist simply of a verb serving as a predicate, often accompanied by various particles. In (10) the predicates (all verbs) are underscored. There are only two separate nominals in the passage, 'the wolf' and 'at the window'. All clauses but two consist of just a verb or a verb with particle (*ù:nę* 'now', *kwę́hs* 'not', *kyé:nę́:* 'here').

(10) TUSCARORA PREDOMINANCE OF VERB-ONLY CLAUSES — Elton Greene, speaker

U:nę́ ha? θkwarì:nǫh,
now the wolf

wahra?nę́?tyą́:?nę́? *ǫθahrayá:kǫ?,*
he tried he will get out

wa?thraweθna?sihà:ra?.
he belly-caught

Awą́?kye *kwę́hs* *ahrakwè:ni?* *ahra?ną́:kuht.*
at water (=glass) not he would be able he would pass

U:nę́ *nakayekwarí:ye:t.*
now they arrived together

Wa?kayaíhrǫ?,
they said,

"*Kyé:nę́:,* *ru?tá:wi:.*"
"Here, he's stuck."

Nakayekǫ́hruk.
they clubbed him

θahra?nątawíhsi?
he got loose

θahra?né?ku?.
he ran away

'When the wolf tried to escape, his belly got caught. He could not get through the hole in the window. When they [some people] arrived, they said, "Here, he's stuck", and clubbed him. Finally he got loose and ran away.'

The ratio of predicates to nominals in a stretch of speech depends to a certain extent on the nature of the discussion, the number of participants involved, and other factors. Still, the pattern illustrated in (10) accords well with what we know of the way information is typically presented in spontaneous speech. Speakers tend to focus on

an entity (person, animal, object) and retain it as a topic of discussion over a certain stretch of discourse, perhaps following it through a series of events like those involving the wolf in (10) or commenting on a theme. So long as the topic remains unchanged it need not be re-identified with a full nominal. A pronoun or pronominal affix is sufficient to carry reference.

Languages like Tuscarora raise questions about the syntactic status of the independent nominals like 'wolf' in (10). Every verb in (10) constitutes a complete, grammatical sentence by itself, containing pronominal prefixes specifying the core arguments of the clause like *hra-* 'he' in 'he tried'. The nominal 'wolf' is coreferent with the pronominal prefix, so it is linked to it semantically and pragmatically: both refer to the same wolf. The issue is whether the noun shares the grammatical status of the pronominal prefix as a core argument of the sentence, or is instead simply an adjunct to the nuclear clause contained in the verb. As noted above, the pronominal prefixes are marked for case, but independent nominals are not. Their lack of marking could be seen as evidence that they are unspecified for a specific grammatical role in the clause. Grammatical role is also indicated in many languages by word order. In English, subjects and objects are distinguished primarily by their position before or after the verb: SUBJECT-PREDICATE-OBJECT. In Tuscarora however, word order does not distinguish grammatical role: nominals like 'wolf' may appear anywhere in the sentence, before or after the predicate. Languages with structures like these, in which pronominal affixes on the verb specify the core arguments of every clause, have been termed 'pronominal argument languages' by Jelinek (1984 and elsewhere). The pronominal affixes in these languages are identified as syntactic arguments, and independent nominals as adjuncts. Pronominal affixes are not uncommon in North America, but all languages containing them are not uniform in their syntactic structure. The Eskimoan languages, for example, contain full sets of pronominal suffixes on verbs, which specify core arguments, but nouns carry case suffixes as well, and clauses show a basic SUBJECT-OBJECT-PREDICATE word order.

An interesting restriction on possible simple clause structures can be seen in some languages of the Northwest Coast. It is now well known that speakers of most languages rarely introduce new participants into discourse as the subject/ergative/agent of a transitive clause. Though they might seem perfectly grammatical, sentences like *A nice man helped me out* are surprisingly rare in spontaneous speech. Speakers more often introduce new entities in presentative constructions, in intransitive clauses, or as objects/absolutives/patients of transitives: *A nice man came up and offered to help*, or *I met a nice man there and he helped mè out.* For this reason ergative arguments (or subjects or agents of transitives) are rarely identified in full noun phrases: they are usually represented by pronouns or by nothing at all. In an examination of a corpus of spoken Sacapultec Mayan, for example, Du Bois (1987)

discovered that only 2.9 percent of the clauses contained lexical ergatives. Examinations of corpora from numerous other languages have shown similar percentages.

In various Coast Salishan languages, the tendency to avoid lexical ergatives has solidified into a grammatical prohibition against them. In Lushootseed, for example, a Coast Salishan language of Puget Sound in northwest Washington, intransitive verbs may be transitivized with various suffixes, such as causatives.

(11) LUSHOOTSEED INTRANSITIVES AND TRANSITIVES — Hess 1995: 6, 22

a.

ʔuʔuxʷ	*čəd.*			*ʔuʔuxʷ*	*ti*	*luƛ*
ʔu-ʔuxʷ	*čəd*			*ʔu-ʔuxʷ*	*ti*	*luƛ*
PRF-go	I			PRF-go	the	old.man
'I went.'				'The old man went.'		

b.

ʔuʔuxʷtxʷ	*čəd*	*ti*	*čačas.*		*ʔuʔuxʷtxʷ*		*ti*	*čačas*
ʔu-ʔuxʷ-txʷ	*čəd*	*ti*	*čačas*		*ʔu-ʔuxʷ-txʷ*		*ti*	*čačas*
PRF-go-CAUSATIVE	I	the	boy		PRF-go-CAUSATIVE	the	boy	
'I took the boy [somewhere].'					'[He] took the boy [somewhere].'			

First and second person subjects are represented by pronouns, and given third person subjects are unmarked. As can be seen in (11)b, transitive clauses with pronominal agents are fine. Transitive clauses with lexical agents are never used, however. The only way to identify the agent of a verb like 'take' with a lexical nominal is to passivize the clause. The agent is then represented by an oblique nominal, as in (12).

(12) LUSHOOTSEED LEXICAL AGENT — Hess 1995: 22, 41

a.

ʔuʔuxʷtub	*ʔə*	*ti*	*luƛ*	*ti*	*čačas*
ʔu-ʔuxʷ-txʷ-b	*ʔə*	*ti*	*luƛ*	*ti*	*čačas*
PRF-go-CAUSATIVE-DETRANSITIVE	OBLIQUE	the	old.man	the	boy
'The old man took the boy.'		['The boy was taken by the old man.']			

b.

ʔuɬukʷtub	*čəxʷ*	*ʔu*	*ʔə*	*ti*	*ʔacitalbixʷ.*
ʔu-ɬukʷ-txʷ-b	*čəxʷ*	*ʔu*	*ʔə*	*ti*	*ʔacitalbixʷ*
PRF-go.home-CAUSATIVE-DETRANSITIVE	you	Q	OBLIQUE	the	people
'Did the people take you home?'	['Were you taken home by the people?']				

Similar patterns are described in Lummi, another Coast Salish language, by Jelinek & Demers (1983). Lummi shows the same prohibition against lexical agents in transitive clauses. The language has also gone a step further in prohibiting transitive clauses with any third person agent and a first or second person patient.

4.2 Word order

An obvious way in which languages can differ is in the order of words in sentences. English shows a basic SUBJECT-PREDICATE-OBJECT order, usually referred to as SVO: *Hank* (S) *found* (V) *the dog* (O). The Nootka examples in 4.1 show a basic Predicate-initial order. The same order appears in Salishan, Tsimshianic, and Chumashan languages among others. The passage in (1), from Barbareño Chumash, was recorded by J.P. Harrington from speaker Mary Yee. (Numbers indicate the reel and frame in microfilms of his fieldnotes compiled by Mills and Brickfield. Morphological analysis is by Suzanne Wash.) The letter **V** marks predicates, **S** subject noun phrases, and marks object noun phrases. Subjects are also specified on verbs by pronominal prefixes (*s-* 'he/she/it') and objects by pronominal suffixes (*-us* 'him/her', *-wun* 'them').

(1) BARBAREÑO CHUMASH PREDICATE-INITIAL ORDER — Mary Yee to Harrington 59.117

saxipaƙa
s-axi-paƙa
3-times-one
'Once upon a time

V	**O**	**S**
hisnukumi	*hilmagnet*	*hiloklesiya,*
hi=s-nukumi	*hi=l=magnet*	*hi=loklesiya*
DEPENDENT=3-bring.home	DEPENDENT=ARTICLE-magnet	DEPENDENT=Lucretia

Lucretia brought home a magnet

V	**O**	
hikasušpakin̓wun	*hiɬəhəʔ*	*hisʔawʔawuxʔaʔ*
hi=ka=s-uš-pak-in-wun	*hi=l=ʔəhəʔ*	*hi=s-ʔaw-ʔawuxa-ʔ*
DEP=SO=3-by.hand-pick.up-IMPRF=PL	DEP-ARTICLE-many	DEP=3-RDP-needle-EM

hilklapʰon	*hihoʔsalitəq*	*hiluwisa*
hi=l=klapʰon	*hi=hoʔ=s-alitəq*	*hi=luwisa*
DEPENDENT=ARTICLE-gramophone	DEPENDENT=REMOTE-3-front	DEPENDENT=Luisa

and picked up a whole chain of gramophone needles in front of Luisa.

	V	**O**
kəpə	*kanasʔipus*	*hiluwisa*
kəpə	*ka=ana=s-ʔip-us*	*hi=luwisa*
now	then=INTENTIVE=3-say-3	DEPENDENT=Luisa

When she tried to explain to Luisa . . .'

More common cross-linguistically is basic Predicate-final order. Lakhota, a Siouan language of the Plains, shows a basic Predicate-final or SOV order.

(2) LAKHOTA SOV ORDER — Stan Redbird, speaker

O	**V**
wacʰíʔpi=wą	*ų-káya=pi*
dance-NOMINALIZER=a	1-make=PL

'We had a powwow.

S			**O**	**V**
lakʰóta	*ikčéya=ča*	*hé*	*wacʰíʔpi=wą*	*ų-káya=pi.*
Indian	common=RELATIVE	that	dance-NOMINALIZER=a	1-make=PL

We were just ordinary Indians that made the powwow.

Martha St. John *ečíya=pi=wą*
say=PL=a
A woman they call Martha St. John,

S	**V**
higną́-ku=kį	*i̓a=čʰá,*
husband-her=the	die=so

her husband died, so

hé	*yuʔónihą*	*kel,*
that	honor	in.a.way

in honor of that

O		**V**
wacʰíʔpi	*he*	*ų-káya=pi*
dance-NOMINALIZER	that	1-make=PL

we had that powwow.'

In most languages, alternate orders may be used for pragmatic purposes. Nominals may precede the nuclear clause to announce a shift in topic and or focus of contrast (in that order), or follow the nuclear clause to confirm established information. Each construction is characterized by a distinctive prosodic pattern, involving features of pitch, volume, and rhythm (Mithun 1993d, 1995b). Nominals announcing a topic shift are often detached intonationally from the following clause, which typically shows a pitch reset. Those representing a focus of contrast show higher pitch and greater

volume than the initial nominals within pragmatically unmarked clauses. An initial object representing a contrast can be seen in (3), from a Lakhota tale in which the trickster Iktomi had pretended to sicken and die. When his family looked into the tent where he had been lying, they found only bones, which they took to be his. In fact the bones were not his at all. This contrast with expectation is highlighted by the initial position of the object nominal 'those puppy bones' before the nuclear clause.

(3) LAKHOTA INITIAL O: FOCUS OF CONTRAST — Deloria 1932: 14

		O		S		V
Leya	*hená*	*sųxpála-huhù*	*čʰa*	*Iktómi*	*tąyéla*	*yasmí*
actually	those	puppy-bone	such		well	meat.ate.off

'Actually it was puppy bones that Iktomi had eaten all the meat off of.'

Nominals following the nuclear clause, termed 'antitopics' by Chafe (1976), usually serve to confirm established information. They are typically uttered in a relative monotone with low pitch, volume, and speed. They often occur in contexts where reference is potentially ambiguous, as when action or speech shifts rapidly back and forth between participants. Both participants remain active discourse topics throughout the interchange, so they need not be reintroduced or recalled to consciousness with each new action. The right-detached nominals simply confirm matches between the participants and their actions. Although both subjects and objects may follow the nuclear clause, subjects are considerably more common, because they more often function as continuing topics. The right-detached subject in (4) similarly confirms the identity of an established participant, this time adding affective meaning. Its position outside the clause is clear from the presence of the clause-final enclitic *=lo*, typically used by male speakers to add assertive force.

(4) LAKHOTA FINAL S: ANTITOPIC — Deloria 1932: 22

V		S
Wičákʰe	*séce=lo*	*witkó=kį.*
be.right	perhaps=ASSERTIVE	fool=the

'The idiot might just happen to be talking sense.' ('He might be right, the fool.')

Departures from the basic SOV order are quite rare in Lakhota. In a 500-clause narrative sample, only 0.9 percent of the clauses with independent nominals deviated from this order. Languages in most other branches of the Siouan family show similar patterns. In a comparable narrative sample from Mandan, for example, just 0.8 percent of the clauses departed from the basic SOV order (Mithun 1995). The similarities suggest that Proto-Siouan word order was the same, a relatively rigid SOV.

Languages in the Dhegiha branch of the family, however, show a markedly different profile. The same basic SOV order can be discerned, as in (5). (As in all languages, sentences with both subject nominals and object nominals are rare.)

(5) OMAHA BASIC SOV ORDER — Dorsey 1890: 154

S		O	V
Nų́	*amá*	*hi^{n}qpé*	*gcíza-bi*
man	the	fine.feather	took.his=they.say

'The man took his fine feather.'

As in Lakhota, nominals may precede the nuclear clause to highlight a shift in topic or a focus of contrast, or follow the nuclear clause to reiterate established or accessible information. (6)a shows both structures, a highlighted object nominal 'that strong cord' before the nuclear clause, and a backgrounded subject nominal 'the man' following it, reiterating the identity of an established participant. The final object nominal in (6)b confirms the identity of the previously mentioned cord.

(6) OMAHA PRAGMATICALLY MARKED ORDER — Dorsey 1890: 155

a.

	O				V	S	
Gá^{n}	*hájiñga*	*áwanji*	*ke*	*é*	*ţizá-biamá*	*nú*	*aká*
and	cord	strong	the.OBJECT	that	took=they.say	man	the

'And the man took that strong cord, they say.'
('And that strong cord, he took it, they say, the man.')

b.

S		V	O
itán	*de*	*bisá=biamá*	*hájiñga*
her	daughter's.husband	broke=they.say	cord

'Her daughter's husband broke the cord, they say.'
('Her daughter's husband broke it, they say, that cord.')

Though we do not have access to the intonation patterns of these sentences, there is morphological evidence that the final subject of (6)a and final object of (6)b are both outside of the nuclear clause. The hearsay enclitic *=biamá* closes off clauses.

The Omaha structures that depart from SOV order are similar in function to those in Lakhota, but they are much more frequent. In a narrative sample comparable to that analyzed for Lakhota, a full 20.4 percent of the clauses with nominals showed non-SOV order, considerably more than the 0.9 percent of Lakhota. The exploitation of word order for pragmatic purposes can be seen in the passage in (7), where there is frequent departure from the basic SOV. (*ð* has been substituted for Dorsey's *ţ*.)

(7) OMAHA PRAGMATIC WORD ORDER — Dorsey 1890: 402-3

	S		V	
a.	*Umáⁿhaⁿ=amá*	*nudáⁿ*	*aðá=biama*	*wáñgiðe.*
	Omahas=the.PL.AGENT	to.war	went=they.say	all
	'All of the Omahas went on the warpath . . .			

	V	S	
b.	*Atí=biamá*	*áhigi=amá*	*(Umáⁿhaⁿ=amá).*
	came=they.say	many=the.PL.AGENT	Omahas=the.PL.AGENT
	The main body (of Omahas) came . . .		

	[O	V]	O
c.	*wapé*	*gðíze-ma*	*Páðīⁿ-má*
	weapon	those.who.took.theirs-PL.PATIENT	Pawnee-the.PL.PATIENT
	They killed some of the Pawnees as they were seizing their weapons,		

	O			V
d.	*jáⁿłe-má*	*cti,*	*cáⁿcaⁿ*	*wáqði=biamá*
	those.sound.asleep-PL.PAT	too	without.stopping	they.killed.them=they.say
	and the others who were still sound asleep . . .			

		O	V	S
e.	*Edíhi*	*ki,*	*wapé*	*gðzai te*	*Páðīⁿ=amá.*
	at.that.time	when	weapon	took their	Pawnees=the.PL.AGENT
	At that time, the Pawnees seized their weapons;				

		V	O
f.	*Edíhi*	*ki,*	*łéwaðe-hnáⁿi*	*Umáⁿhaⁿ-ma.*
	at.that.time	when	they.killed.them.regularly	Omahas-PL.PATIENT
	and then they killed the Omahas.			

	S		V		V	S
g.	*Djúba umúcte*		*ahú*	*te,*	*wajíⁿ-píbaji*	*Páðīⁿ-ma.*
	a.few	remained.from.shooting	they.arrived	when,	in.bad.humor	Pawnees-the
	When a few Pawnees who remained after shooting arrived, they were desperate.					

	O		V	S	
h.	*Cáðewáðe*	*égiðe*	*łéƚa=biamá,*	*Páðīⁿ*	*amá.*
	Caƚewaƚe	at.length	killed.(him)=they.say	Pawnees	the-PL.AGENT
	At length, the Pawnees killed Cadhewadhe.'				

The Omahas are first introduced with a clause-initial nominal (line a), but each subsequent mention of them is after the nuclear clause, since they represent accessible information. Following a description of Omaha preparations for war, attention is shifted to the Pawnees with an initial nominal, before the nuclear clause (c). Once their identity is established, they, too, are mentioned only in nominals following the clause (h, i).

The substantial increase in word order flexibility in this branch of the family correlates with another development in the grammar. The Dhegiha languages have developed a set of definite articles, many from demonstratives that originated as positional verbs (section 3.4). The articles distinguish arguments according to their animacy, number, shape, and position or movement. Several of the articles that appear with animates distinguish semantic role as well: *=amá* is used with animate plural agents (lines a, b, e, h) and *-ma* with animate plural patients (c, d, f, g). The articles are optional, but their value in disambiguating reference to animate arguments can be seen in the passage in (7). Their development apparently permitted speakers of the Dhegiha languages to exploit word order for pragmatic purposes more often than speakers of Lakhota, with less danger of ambiguity.

In some languages the exploitation of word order for pragmatic purposes has gone a step further. Languages of the Iroquoian family, including Tuscarora, show some of the same ordering strategies as those of the Siouan family. Nominals may be placed to the left of the nuclear clause to highlight a shift in topic or a focus of contrast. A topic shift can be seen in the passage in (8) from a Tuscarora story. A hungry fox saw a fish pedlar driving by. The fox decided to lie down in the road to make the driver think he was dead. The topic then shifts to the pedlar. He is identified by an initial nominal, spoken with greater pitch and volume and separated by a short pause from the rest of the sentence, which shows a pitch reset.

(8) TUSCARORA TOPIC SHIFT — Elton Greene, speaker

	Hra?nyahkwì:nąs	*ką́:tšyą* . . .	*wáhre?r*	*rawąhé:yą:.*
	he's.peddling	fish	he.thought	he.was.dead
	'The fish pedlar, . . . he thought he was dead.			

Wa?thrakyérhahk	*wáhre?r*	*rawąhé:yą:,*	
he.body.picked.up	he.thought	he.was.dead	
He picked up what he thought was the dead body,			

ù:nąˀ	*hé:snąˀ*	*θahra?n ù:ri?*	*ha?*	*áha:θ.*
now	then	again.he.drove	the	horse
and then he drove his horse on again.'				

Nominals also appear to the right of the nuclear clause to reconfirm established information. The fox, ensconced amid the fish in the back of the wagon, threw one out then hopped out himself. After eating the fish, he smelled very fishy, and decided to play a trick on the bear. The final nominal in (9) represents the fox, already an established participant. Intonationally it was separated slightly from the preceding verb and spoken on a lower, softer monotone.

(9) TUSCARORA ANTITOPIC — Elton Greene, speaker

Hé?thu	*yahwáhre:t*	*wa?na?ta?nyę?θéhre?,*	*ha?*	*katšúšhuh.*
there	he.went	he.went.to.visit.him	the	fox

'There he went, he went down to visit him, the fox.'

Word order in the Iroquoian languages differs from that in both Lakhota and Omaha, however. In Tuscarora text samples comparable to those examined for Lakhota and Omaha, over two-thirds (67.7 percent) of clauses containing nominal arguments departed from SOV order. Word order is not syntactically based at all. Elements are ordered purely according to their relative importance within the discourse. There is no unmarked syntactically based order. Constituents appear in decreasing order of newsworthiness, without regard to syntactic function (subject, object) or even lexical category (noun, verb) (Mithun 1987, 1995).

Various features can render a constituent newsworthy. New entities are typically more newsworthy than those already part of the scene. But several elements of a message may be new. When the hungry fox first saw the wagon going by, he looked more closely and saw that the driver was selling fish. Both the selling and the fish were new, but the fish was the important element and accordingly mentioned first.

(10) TUSCARORA PATIENT-VERB (OV) — Elton Greene, speaker

Kę́:tšyę	*ratęnì:nęh.*
fish	he's.selling

'He's selling fish.'

When the fox was in the wagon, he picked out a fish and threw it out. This time the fish, already an established part of the scene, appears after the verb, which introduces a new event and moves the story along. The same pattern appears two lines later.

(11) TUSCARORA VERB-PATIENT (VO) — Elton Greene, speaker

Wahrará:ku?	*ha?*	*kę́:tšyęh,*	*?ís?ę*	*yahwahráhrihr.*
he.took.out	the	fish	far	away.he.threw it

'He picked out a fish and threw it far away.

U:nę	*θahra?rá:?naku?.*
then	again.he.got.himself.out

He jumped out the wagon.

θahrarúhtšrę?	*henì:kę:*	*kę́:tšyęh,*	*wahratú:rę?.*
again.he.gathered	that	fish	he.put.it.away

Then he picked up that fish and put it away.'

The ordering is not restricted to predicates and core arguments. The fox explained to the bear that he could catch a lot of fish himself by putting his tail into a hole in the ice. The ice was introduced with a full clause in 12(a). Once established, it was mentioned at the end of its clause in (b), after the verb that moved the tale along.

(12) TUSCARORA LOCATIVE (V LOCATIVE) — Elton Greene, speaker

a. *Wahrą́hrę?* *ha?* *nyuwisáhrarę́h.* [. . .]
he.said that there.it.is.ice.holed
'He said, there's a hole in the ice.
[You're going to put your tail in there. Come on, let me teach you.]

b. *Hé?thuh* *yahwá?nyę:t* *hésnę:* *kyenì:kę:* *uwisá?kyeh.*
there there.they.two.went there this on.the.ice
So the two went out onto the ice.'

An episode of another tale opens with a group crossing the Bering Strait. Both the travel and the ice were new, but the ice had special significance, so was ordered first.

(13) TUSCARORA LOCATIVE (LOCATIVE V) — Elton Greene, speaker

uwisá?kye	*kayekwarì:ye?.*
on.the.ice	they.travel.together

'A group was crossing the ice.'

Several grammatical developments in the Iroquoian languages facilitated the development of purely pragmatic word order. One is an expansion of noun incorporation. The other is a greater elaboration of the pronominal prefix paradigm.

The Northern Iroquoian languages, like a number of other North American languages, contain a morphological process whereby noun stems may be compounded with verb stems to create new verb stems. As a result, ideas which can only be expressed in other languages by a verb plus nominal can be expressed in a single verb in Iroquoian languages like Tuscarora. The three clauses in (14), from the fox story,

are based on verbs with the incorporated noun root *-ʔrwʒhθ-* 'tail'.

(14) TUSCARORA NOUN INCORPORATION — Elton Greene, speaker

wahru?rwʒhθʒ́:ʔni?		*haʔ*	*uhtšíhrʒʔ.*
wa-hru-ʔrwʒhθ-ʒʔni-ʔ		*haʔ*	*u-htšihr-ʒʔ*
FACTUAL-MASCULINE.PATIENT-tail-lose-PRF		the	NEUTER-bear-NOUN.SUFFIX
'The bear lost his tail.			
ìskah	*ʒθahra?rwʒhθʒ́ʔna:k*		
iskah	*ʒ-θ-a-hra-ʔrwʒhθ-ʒʔn-a:k*		
not	OPTATIVE-REPETITIVE-OPTATIVE-MASCULINE.AGENT-tail-have-CONTINUATIVE		
He no longer has a tail.			
kʒ:θ	*tihra?rwʒhθé:θʔuʔy.*		
kʒ:θ	*ti-hra-ʔrwʒhθ-eθ-ʔuʔy*		
customarily	PARTITIVE-MASCULINE.AGENT-tail-be.long-AUGMENTATIVE		
He used to have a long tail.'			

Incorporation is used pervasively in the Northern Iroquoian languages for several functions, described in 2.2.3. As a result, there are fewer clauses with independent nominals, so fewer occasions on which a syntactically-based order would be necessary.

Lakhota and its relatives contain pronominal prefixes on verbs for first and second persons but not third. Grammatical relations between third person arguments and their predicates are syntactic, links between independent nominals (nouns or demonstratives) and verbs. These relations are expressed in Lakhota uniquely by word order. The Iroquoian languages have developed complete paradigms of pronominal prefixes that refer to all core arguments of the clause, in first, second, and third persons. The pronominal prefixes carry distinctions not only of person but also gender, number, and case, as was seen earlier. Grammatical relations are thus fully expressed morphologically within the verb. Both the grammatical structure of the Iroquoian languages and prosodic patterns in speech suggest that the syntactic bond between independent nominals and predicates is not as tight as it is in languages like Lakhota and English. Tuscarora nominals carry no case markers, they are often pronounced in separate intonation units, and their order with respect to the predicate shows no evidence of a syntactic basis.

The presence of pronominal prefixes specifying core arguments in every verb undoubtedly facilitated the development of a fully pragmatic word order. The development was not mandatory, however. As noted earlier, languages of the Eskimo-Aleut family also show pronominal suffixes in every verb. Four persons are distinguished, three numbers, and two cases. As in Iroquoian languages, the pronominal suffixes are present even when independent nominals appear in the clause as well. The verb in the Yup'ik clause in (15) contains the pronominal suffix *-mki* 'I/them' referring to the speaker and her money, even though the money is identified by a separate noun (grammatically plural in Yup'ik).

(15) CENTRAL ALASKAN YUP'IK PRONOMINAL SUFFIXES — Elena Charles, speaker

akiukaranka,	*aturpakaamki*
akiute-karar-nka	*atur-pakar-a-mki*
money-little-1SG/3PL	use-so.long-CONSEQUENTIAL-1SG/3PL
'because I have been using my limited money so much'	

The languages even contain a construction that is functionally similar to noun incorporation in some ways, whereby verbs are derived from a noun stem (like *imiaruar-* 'doll' in (16)) plus a verbalizing suffix with root-like meaning (*-li-* 'make').

(16) CENTRAL ALASKAN YUP'IK DENOMINAL VERB — Elena Charles, speaker

imiarualiunga
imiar-uar-li-u-nga
offspring-imitation-make-INDICATIVE.INTRANSITIVE-1SG
'I am dollmaking' = 'I am making a doll'

Despite their pronominal suffixes and verb derivation, the Eskimoan languages show clear syntactic bonds between predicates and their nominal arguments, unlike the Iroquoian languages. Nouns carry case suffixes (further described in 4.4.1), and a syntactically-based SOV constituent order can be discerned. The presence of the pronominal suffixes and case markers does ensure that word order is not the sole indicator of grammatical relations. As might be expected, the basic SOV order is frequently altered for pragmatic purposes with little danger of referential ambiguity.

The potential interaction of word order with other indicators of grammatical relations is further illustrated by developments in Aleut, a sister to the Eskimoan languages, spoken on the Aleutian, Pribilof, and Commander Islands off Alaska and Siberia. Bergsland (1989, 1997) shows that these developments were triggered by a phonological reduction of final syllables, which led to a severe reduction in the original Proto-Eskimo-Aleut noun case and pronominal suffix systems. If both core arguments in a clause are represented by nouns, neither carries case marking, and pronominal suffixes on verbs do not distinguish participants either. As a result, constituent order has become quite rigid, nearly invariant SOV, in contrast with the more fluid order of the Eskimoan languages.

4.3 Grammatical relations and case

The roles of participants in events and states can be specified in a variety of ways. Most of the familiar mechanisms for distinguishing these roles are represented in North America. Certain rarer patterns can be seen as well.

Devices well known from Indo-European languages are case suffixes or enclitics. (Suffixes are attached to nouns, and enclitics to noun phrases.) A few North American languages show surprisingly Indo-European-like case systems. Among these are the Utian languages of California. Case in Lake Miwok, formerly spoken south of Clear Lake in northern California, is described in Callaghan 1963. The language contains ten case enclitics: nominative, accusative, genitive, instrumental, locative, allative, ablative, comitative, appositive, and vocative.

The **nominative** case enclitic *=n(u)* marks subjects. (Allomorphy can be complex.) The nominative enclitic is used for agents and patients, in transitives and intransitives.

(1) LAKE MIWOK NOMINATIVE CASE — Callaghan 1963: 91

kúku=n ʔintíkkit mékuh.	'A flea (NOM) is sitting on your forehead.'
mú?e=n lóoho.	'The whole lot of them (NOM) are lazy.'
kúku=n ʔintíkkit maṭáa wace.	'A flea (NOM) must have bitten your forehead.'

The **accusative** case *=uc* marks objects. Lake Miwok objects include not only semantic patients but also arguments that might be oblique in other languages.

(2) LAKE MIWOK ACCUSATIVE CASE — Callaghan 1963: 96-8

káac=u ʔúṭe.	'He saw the fish (ACC).'
kiwwa=uc kani=c wajan.	'Give me (ACC) the arrow (ACC).'
máataj=u hínammakṭu wéeta.	'He was bragging about that man (ACC).'

The **genitive** case identifies possessors. (The basic noun for 'man' is *tájh.*)

(3) LAKE MIWOK GENITIVE — Callaghan 1963: 94

ʔóle=n ṣúluk	'coyote=GEN skin' = 'coyote skin'
táj ṣáapa	'man.GEN hair' = 'the man's hair'

The **instrumental** *=ṭu* is translated 'with', 'by means of', 'from', 'through', or 'in'.

(4) LAKE MIWOK INSTRUMENTAL — Callaghan 1963: 112-3

tumáj=ṭu ʔíṭi kapakáaṭi.	'I hit him with a stick.'
hanaʔéelakon=ṭu weno húu.	'He escaped through the help of his pets.'
maʔáaṭaw=ṭu númpat támal káṣan.	'In our language this way is north, isn't it?'

The **locative** *=m* indicates location: 'at', 'in', 'on'. (The word *núma* is 'different' and *húuke* is 'before'. The noun *réej* 'king' is borrowed from Spanish.)

(5) LAKE MIWOK LOCATIVE — Callaghan 1963: 110

máac numáawa=m móla.	'She piled that in a different place.'
réej húukewa=m tálah.	'He's standing in front of the king.'

The **allative** enclitic *=t(o)* indicates direction toward a goal: 'to', 'into', 'during', 'near', 'by', 'onto'. (The noun *wéja* is 'ground'.)

(6) LAKE MIWOK ALLATIVE — Callaghan 1963: 104

réej=to ʔonínnuka.	'He brought (them) to the king.'
wejáa=ṭ ʔutéhhinte	'where he fell onto the ground'

The allative is also used for time. (*ʔáwwe* is 'tomorrow' and *káṣṣa* 'this time'.)

(7) LAKE MIWOK ALLATIVE FOR TIME — Callaghan 1963: 105

ʔáwwe=ṭ káṣṣa=ṭ ṣe ʔinʔuṭéewelak. 'Tomorrow I'll see you at this time again.'

Callaghan reports that the allative can also be used for a more specific designation of place than the locative, comparing the locative *kenéewa=m* 'on one side' with the allative *kenéewa=ṭ* 'in a corner (in one particular place)'.

The **ablative** *=m(u)* marks a source: 'out of', 'from', 'away from'. It may appear with a concrete place, a point in time, or a situation. (*má* is 'that', *kilac* 'long ago', and *máakhinte* 'the state of being sick'.)

(8) LAKE MIWOK ABLATIVE — Callaghan 1963: 111

káatun má=m táke.	'The cat came out of there.'
tájh=mu kawéeṭa.	'I walked away from that man.'
néen kilác=mu hójot.	'This started from a long time ago.'
mántin máakhinte=m . . .	'When somebody gets over being sick . . .'

The **comitative** *=ni* indicates accompaniment: 'with' or 'along with'.

(9) LAKE MIWOK COMITATIVE — Callaghan 1963: 118

kaʔáppi=ni kawícaj.	'I am walking with my father.'
háali máac henáa=ni ṣukúhto.	'Maybe he's there yet, still alive.' ('Maybe he's still there with his breath.')

Comitative enclitics are often used where conjoined nominals would be used in many other languages. Both conjuncts carry the enclitic.

(10) LAKE MIWOK COMITATIVE SUBJECT — Callaghan 1963: 119
kaʔunúu=ni kaʔáppi=ni háaliko nít kocṣúkuh.
'My mother and my father are still here.'

A case termed the 'appositive' by Callaghan, usually unmarked, is used in citation forms, in exclamations, and after demonstratives. It is often translated 'it is'.

(11) LAKE MIWOK APPOSITIVE CASE — Callaghan 1963: 88-9
"*hintikaṭun ʔáaṭaw 'tree' kóocaʔaṭawṭu?*" "*ʔálwa.*"
"How do you say 'tree' in Lake Miwok?" "*ʔálwa.*"

ʔútel kóono mahínti.	'It's a white man's gun, you know.'
jomúnnaka hú	'What a beautiful day!'
nűni ʔinlúppu.	'Here is your money.'

Finally, there are special **vocative** forms of kinship terms, used for addressing relatives. (The basic root for 'mother' is *ʔúnu* and that for 'grandchild' is *cáco-*.)

(12) LAKE MIWOK VOCATIVES — Callaghan 1963: 121

ʔunúu ʔujée.	'Mother, come here!'
cácco cácco! kanic hájpance!	'Grandchild, grandchild! Wait for me!'

Many languages show a distinction between two kinds of case relationships: those termed 'core' or 'primary' cases and those termed 'oblique' or 'secondary' cases. Core cases are sometimes described as 'grammatical cases'. Core arguments are those that are required in basic intransitive and transitive clauses for grammaticality, like the Lake Miwok nominative and accusative cases. Oblique arguments may not be required for grammaticality in the same way and are sometimes said to be more semantic in function, like the Lake Miwok genitive, instrumental, locative, allative, ablative, and comitative. Core and oblique cases may be marked in distinct ways within a language. In English, core noun phrases are not preceded by prepositions, and their roles are distinguished by their positions within the clause: subjects precede the predicate, while objects follow (SVO). The roles of oblique noun phrases are marked by prepositions: 'with' for instruments (*We scooped them out with spoons*), 'to' for datives (*She gave it to her mother*), 'for' for beneficiaries (*I bought one for you*), 'at' for locations (*We had lunch at the zoo*), 'from' for ablatives (*It came from Japan*).

Core arguments may be classified in different ways. The most common kinds of systems are known as nominative/accusative, ergative/absolutive, and agent/patient or active/stative. Another kind of system for distinguishing the grammatical roles of core arguments, found in certain North American languages, is known as direct/inverse.

4.3.1 *Nominative/accusative patterns*

Probably the best known system for categorizing core arguments is known as **nominative/accusative** (or simply **accusative**), based on the categories of subject and object. This is the system familiar from Indo-European languages, including English. Such a system was just seen in Lake Miwok, where subject noun phrases are identified by a nominative case enclitic *=n(u)*, and object noun phrases by an accusative case enclitic *=uc*.

Core case is not always marked on nouns or noun phrases. In a large proportion of North American languages, core arguments are specified by pronominal affixes on verbs. In languages of the Chumash family, originally spoken along the central California coast, subjects are expressed by pronominal prefixes on verbs, and objects by pronominal suffixes. Because each verb contains obligatory reference to its core arguments, it can constitute a complete, grammatical clause in itself: *siy-kutiy-it* 'they-see-me'. The Barbareño material cited here (with regularized transcription) was collected by John Peabody Harrington from speakers Juan Justo and Mary Yee.

The subject pronominal prefixes can be seen in (13). (Two adjacent identical obstruents merge to an aspirated obstruent, so the sequence *k-k* is pronounced *kʰ*.)

(13) BARBAREÑO CHUMASH PRONOMINAL SUBJECTS — Juan Justo to Harrington 19.99

k-ʰutiy	'I see (it)'
p-kutiy	'you see (it)'
ṣ-kutiy	'he/she/it sees (it)'
k-iš-kutiy	'we two see (it)'
p-iš-kutiy	'you two see (it)'
š-iš-kutiy	'they two see (it)'
k-iy-kutiy	'we all see (it)'
p-iy-kutiy	'you all see (it)'
ṣ-iy-kutiy	'they all see (it)'
ṣ-am-kutiy	'they (indefinite) see (it)'

The subject pronouns show the same forms whether they represent semantic agents ('It will rush in' in (14)b) or patients ('It melted' in (14)a), and whether the clause is

intransitive ('It will rush in') or transitive with an object ('It will cover her' in (14)b). Gender is not distinguished.

(14) BARBAREÑO CHUMASH PRONOMINAL SUBJECTS — Mary Yee to Harrington 59.707,200

a. *s-exšwey-waš*
3SUBJECT-melt-PAST
'It melted.'

b. *s-ʰaʔ-akt-ax-naʔ* — *ču=s-ixmay-pi*
3SUBJECT-FUTURE-toward-quickly-go — and=3SUBJECT-cover-at.once
'It (a wave) will rush in and cover her up.'

Objects are specified by pronominal suffixes on verbs. Fewer distinctions are made among objects than subjects; dual and plural are the same, and first and second person plurals are the same. Third person singular direct objects are not marked, as in 'it will cover (her) up' above and 's/he sees (him/her/it)' below.

(15) BARBAREÑO CHUMASH PRONOMINAL OBJECTS — Juan Justo to Harrington 19.97

s-kutiy-it 's/he sees me'
s-kutiy-in 's/he sees thee'
s-kutiy 's/he sees (him/her/it)'

s-kutiy-iyiw 's/he sees us (two or more)'
s-kutiy-iyiw 's/he sees you (two or more)'
s-kutiy-wun 's/he sees them (two or more)'

The pronominal affixes appear on verbs whether or not independent noun phrases are present to further identify the subjects or objects. In (16)a (seen earlier in section 4.2), the verb 'she brought (it) home' contains the third person subject pronoun *s-* even though the name 'Lucretia' is also present. In (16)b, the verb 'they fell' contains the third person plural subject pronoun *siy-* 'they' in addition to the independent nominal 'beans'. In (16)c, the verb 'they make them' contains the third person plural object marker *-wun* 'them' in addition to the following nominal 'their beads'. Determiners (*hi=*, *hi=l*, and others) indicate that the following constituent is grammatically dependent, but they carry no indication of case. Arguments are grammatical dependents of their predicates.

(16) BARBAREÑO CHUMASH SENTENCES WITH NOUN PHRASES — Mary Yee to Harrington

a. *s-axi-paƙa* *hi=s-nukumi* *hi=l=magnet* *hi=loklesiya.*
3-TIME-one DEP=3SUBJECT-bring.home DEP=ART=magnet DEP=Lucretia
'There was one time that Lucretia brought a magnet home.' 59.117

b. *ʔiyena* *siy-pili-klaw* *hi=l=piliholi* *hi=mi=šup,*
if 3PL.SUBJECT-through.air-shatter DEP=ART=bean DEP=LOC=earth
'If beans fell on the floor,

ʔal-uniyiw *hi=p-saʔ-uš-pak-wun.*
NOMINALIZER-necessary DEP=2-FUTURE-by.hand-gather-3PL.OBJECT
you ought to pick them up.' 59.6

c. *s-iy-eqwel-wun* *hi=s-iy-qilqilƙililiʔ*
3-PL-make-3PL.OBJECT DEP=3-PL-bead.RDP-EMPHATIC
'They make their beads.' 59.615

4.3.2 *Ergative/absolutive patterns*

In some languages core arguments are categorized differently, into **ergatives** and **absolutives** instead of subjects and objects. The ergative category is generally reserved for the most agent-like participant in a transitive clause ('The monster caught the boy'). The absolutive usually represents either the other core argument of a transitive clause ('The monster caught the boy') or the single argument of an intransitive clause ('The boy jumped', 'The boy slept'). Neither ergatives nor absolutives correspond exactly to either subjects or objects.

Ergative/absolutive patterns (also termed simply **ergative** patterns or **ergativity**) can be seen in both pronouns and fuller noun phrases in the Tsimshianic languages of British Columbia. Case in Sm'algyax (Coast Tsimshian) is described by Boas (1911c), Dunn (1979a,b,c), and Mulder (1987, 1988).

The basic Sm'algyax pronouns are dependent morphemes. Absolutive pronouns are verbal suffixes: *-u* first person singular, *-n* second person singular, *-t* third person, *-m* first person plural, and *-sm* second person plural. The absolutive patterning can be seen in (17): the first person argument *-u* 'I' of the intransitive 'be alive' matches the patient *-u* 'me' of the transitive 'find'. The agent *n=* 'I' of 'take' is different.

(17) SM'ALGYAX ABSOLUTIVE PRONOMINAL SUFFIXES — Mulder 1988: 74,77,74

a. *ła* *wila* *diduuls-u.*
PAST be alive-1SG.ABSOLUTIVE
'I (ABSOLUTIVE) am still alive.'

b. *Ada* *wil* *m* *way-u̲.*
and then 2SG.ERGATIVE find-1SG.ABSOLUTIVE
'And then you found me (ABSOLUTIVE).'

c. *N̲=dm* *man̲-gad-n.*
1SG.ERGATIVE=FUTURE up-take-2SG.ABSOLUTIVE
'I (ERGATIVE) will take you up.'

The ergative pronouns are clitics: *=n=* first person singular, *=m=* second person singular, *=t=* third person, *=dp=* first person plural, and *=m= . . . =sm=* second person plural. They are attached to the predicate complex. (Constituent order in Sm'algyax is basically predicate-initial, although adverbial particles may precede the predicate.) If a predicate contains any tense/aspect particles, the first and second person ergative pronouns (*n=*, *m=*) precede these particles, as in (17)c above. The plural marker of second person (*=sm*) and the third person ergative pronoun (*=t*) follow them, as in (18) below. As can be seen in (18), the ergative pronominal clitic appears even when its referent is further identified by a noun phrase (Rita in (18)).

(18) SM'ALGYAX ERGATIVE PRONOMINAL CLITICS Mulder 1988: 99
yagwa=t̲ *dzap=dit* *Rita* *waas.*
PRESENT=3ERGATIVE make=ERGATIVE.PROPER blanket
'Rita (ERGATIVE) is making a blanket.'

Case on full noun phrases is specified by clitics that precede the noun phrase but merge phonologically with the word to their left. In (18) the clitic *=dit* marks the following noun *Rita* as ergative, but it is attached to the preceding word 'make'. (It is interesting that a similar pattern appears in the Northern Wakashan languages, including Kwakwala. The languages are genetically unrelated, but they are geographically adjacent.) The Sm'algyax clitics distinguish ergative, absolutive, genitive, and oblique (benefactive, instrumental, locative, temporal) categories. The case enclitics, termed 'connectives' by Tsimshianists, also distinguish common nouns from proper nouns, which include independent pronouns. The enclitic *=dit* in (18) identifies *Rita* not only as ergative but also as a proper name. Case enclitics for common noun phrases can be seen in (19): *=a* absolutive common and *=da* ergative common.

(19) SM'ALGYAX COMMON NOUN CLITICS Mulder 1988: 46, 58, 46
a. *Nah* *siipg=a̲* *ɫguwoomɬk.*
PAST sick=ABSOLUTIVE.COMMON child
'The child (ABSOLUTIVE) was sick.'

b. *Yagwa* *hadiks=a̲* *sts'ool* *da* *ts'm* *t'aaks.*
PRESENT swim=ABSOLUTIVE.COMMON beaver OBLIQUE in pond
'A beaver (ABSOLUTIVE) is swimming in the pond.'

c. *Yagwa=t* *huum=da̲* *duus=a̲* *hoon.*
PRESENT=3ERGATIVE smell=ERGATIVE.COMMON cat=ABSOLUTIVE.COMMON fish
'The cat (ERGATIVE) is sniffing the fish.' (elicited)

The language thus shows interesting distinctions among kinds of grammatical relations: ergative pronouns are clausal clitics, while absolutive pronouns are verbal suffixes; core case markers are nominal clitics, while obliques are particles.

As in many languages with ergative patterns, clauses must be highly transitive to be encoded grammatically as transitive. Clauses involving indefinite patients are often categorized as grammatically intransitive, for example, as in (20).

(20) SM'ALGYAX GRAMMATICAL INTRANSITIVE Mulder 1988: 84
Dm *gyeb-u̲* *aks.*
FUTURE get-1SG.ABSOLUTIVE water
'I (ABSOLUTIVE)'ll get some water.'

Certain tense/aspect combinations also decrease transitivity, such as the perfect with its element of stativity. Both perfect sentences in (21) are grammatically intransitive.

(21) SM'ALGYAX GRAMMATICAL INTRANSITIVES Mulder 1988: 58, 114
a. *Nah* *xbeexs=a̲s* *Dzon* *lak* *da* *ha-xbeexsg.*
PERFECT cut=ABSOLUTIVE.PROPER John wood OBLIQUE.common INST-saw
'John (ABSOLUTIVE) has cut (the) wood with a saw.'

b. *Nah* *dzab=a̲s* *Dzon* *waap* *das* *Helen.*
PERFECT make=ABSOLUTIVE.PROPER John house OBLIQUE.PROPER Helen
'John (ABSOLUTIVE) has built a house for Helen.' (elicited)

Habitual activities are expressed by a kind of noun incorporation whereby the verb is linked to a generic nominal by a connector *-m*. The result is again intransitive.

(22) SM'ALGYAX INCORPORATION Mulder 1988: 154
Yagwa *suwiliinsg-m* *wa̲n=s̲* *Nagwaat.*
PRESENT hunt-CONNECTIVE deer=ABSOLUTIVE.PROPER Father
'Father (ABSOLUTIVE) is out deer-hunting.'

Mulder finds an ergative pattern in another area of the grammar: ergatives are omitted from imperatives. The pronoun *-n* 'you' appears in the intransitive command in (23)a, where it is absolutive, but not in the transitive command in (23)b, where it would be ergative. (The first person takes the form *-i* in irrealis contexts.)

(23) SM'ALGYAX IMPERATIVES — Mulder 1988: 87,171

a. *Amuxs-n.*
listen-2SG.ABSOLUTIVE
'Listen!'

b. *łümoom-i.*
help-1SG.ABSOLUTIVE
'Help me!'

Like nominative/accusative patterns, ergative patterns are not restricted to case markers on nouns. The Chinookan languages, spoken along the Columbia River in Oregon and Washington, show an ergative pattern in their pronominal prefixes in verbs. Up to three core arguments are specified: ergative, absolutive, and dative. The pronominal prefixes distinguish first, second, third, and indefinite persons; inclusive and exclusive first person; masculine, feminine, and neuter third persons; and singular, dual, and plural number. The cases of the pronominal prefixes are distinguished by their relative positions within the verb. Most show the same shapes in all three cases, but the masculine and feminine singulars have distinct ergative forms. The neuter ergative, all dual ergatives, and all plural ergatives are distinguished by a following *-k-*.

Nouns are unmarked for case. (They do carry gender and number prefixes.) Boas notes that nouns representing core arguments 'are treated as appositions, without any organic connection with the sentence, except in so far as the pronouns agree with the nominal gender' (1911a: 646-7).

The ergative patterning of the pronominal prefixes can be seen by tracing the form of the masculine singular, which is underscored, through the passage in (24). It comes from a Wishram Chinook text collected and analyzed by Dyk.

(24) WISHRAM — Dyk 1933: 145-56

gačiaxgmčx̣úgwa		*da·n*	*iɬx̣lḿ*
ga-č-i-a-x̣-g-mčx̣uk^{w}		*da·n*	*i-ɬx̣lm*
REMOTE.PAST-3MASC.ERG-3MASC.ABS-3FEM.DAT-from-DIR-ask.for		Q	MASC-food

'He asked her for something to eat. . . .

kwapt	*galiktá*	*galix̣k'wa.*
kwapt	*gal-i-kta*	*gal-i-x̣-k'wa.*
then	REMOTE.PAST-3MASC.ABS-move.fast	REMOTE.PAST-3MASC.ABS-RFL-go.home

Then he ran home.

galix̣k'wáyaitambət		*galix̣pšút*
gal-i-x̣-k'wa-yaitam-bət		*gal-i-x̣-pšut*
REMOTE.PAST-3MASC.ABS-RFL-GO.HOME-arrive-when		REMOTE.PAST-3MASC.ABS-RFL-hide

When he got home he hid . . .

kwapt	*ayak'iš*	*gagiunax̣tłám.*
kwapt	*a-ya-k'iš*	*ga-g-i-u-naštł-am*
then	3FEM-3MASC.GEN-F'S.mother	REMOTE.PAST-3FEM.ERG-3MASC.ABS-DIR-seek-to

Now his grandmother went to seek him . . .

galaxk'wáyaitambət
gal-a-x-k'wa-yaitam-bət
REMOTE.PAST-3FEM.ABS-REFLEXIVE-go.home-arrive-when
When she arrived home,

gagiglkl	*ix̣pšút*
ga-g-i-glkl	*i-x̣-pšu-t*
REMOTE.PAST-3FEM.ERG-3MASC.ABS-see	3MASC.ABS-REFLEXIVE-hide

she saw him hiding . . .

kwapt	*gagiugwílilxłčk.*
kwapt	*ga-g-i-u-gwi-lilx-ł-čk*
then	REMOTE.PAST-3FEM.ERG-3MASC.ABS-DIR-hit-CONTINUATIVE-PERFECTIVE

Then she whipped him.'

4.3.3 *Agent/patient and active/stative patterns*

A number of North American languages classify core participants grammatically in a third way, based on the semantic roles of participants. In these languages, participants serving as **agents** constitute one category ('The boy jumped', 'The boy caught a lizard'), while those serving as **patients** constitute another ('The monster caught the boy') and states ('The boy is sleeping'). A detailed discussion of **agent/patient** systems is in Mithun 1991. Such patterns appear in the Iroquoian, Muskogean, Caddoan, Siouan, and Pomoan families, as well as in Chitimacha, Keres, Yuki, Chimariko, and Haida. The pattern thus extends over a wide area that includes parts of the Northeast, Southeast, South, Great Plains, Southwest, West, and Northwest.

An agent/patient pattern can be seen in Haida, a language spoken on the coast of northern British Columbia and southern Alaska. Grammatical relations are indicated in Haida only by the choice of pronoun. The system is described in Swanton 1911, by Leer in Lawrence 1977, and Levine 1977a.

There are two sets of pronouns for core arguments. One represents participants acting more or less as semantic agents, whether the clause is intransitive ('I went up into the woods'), or transitive ('I saw him'). Examples cited here are from Levine 1977a and Lawrence 1977, which use different transcription systems. The original transcription of each source is preserved. Pronouns have independent and cliticized forms. The independent form of the first person singular agent is *ɬa* in Levine and *hlaa* in Lawrence. The clitic form is *ɬʌ* in Levine and *hl(a)* in Lawrence.

(25) HAIDA AGENT PRONOUNS — Levine 1977a: 190, 113

a. *ɬk̓in*	*x̌a*	*giyu*	*ɬʌ*	*qayd-ʌn.*
woods	DIST	toward-FOREGROUND	1SG.AGENT	go-PAST

'I (AGENT) went up into the woods.'

b. *la*	*ɬʌ*	*qiŋ-gigʌn.*	
3PATIENT	1SG.AGENT	see-PAST	

'I (AGENT) already saw him.'

The second set of pronouns represent participants involved more as semantic patients, those affected. They occur in both intransitive clauses ('I was cold there') and transitive clauses ('He hit me'). Pronouns in this set also occur with postpositions.

(26) HAIDA PATIENT PRONOUNS — Levine 1977a: 172

a. *hʌwnu*	*di*	*xwi-gʌn.*	
there	1SG.PATIENT	cold-PAST	

'I (PATIENT) was cold there.'

b. *di*	*la*	*squdagʌn.*	
1SG.PATIENT	3AGENT	hit-PAST	

'He hit me (PATIENT).'

The Haida system is similar to some that have been described as **active/stative**. Indeed the majority of Haida verbs that appear with agent pronouns do denote actions. In the dictionary in Lawrence 1977, verbs illustrated with agents include those meaning 'buy', 'paddle, 'work', 'serve', 'catch', 'shake (something)', 'scrape', 'bathe', 'leave', 'fetch water', 'walk', 'dig', 'sweep', 'weed a garden', 'tan (a hide)', 'toss', 'sing', 'roast on a stick', 'paint', 'come in', 'clean fish', 'carry on chest in container', 'eat', 'save food', 'write', 'cut', 'iron', 'drink', 'barbecue', 'borrow', 'forecast weather', 'go visit', 'chop down trees one by one', 'smoke fish', 'chew hard food', 'mix with a spoon', 'lock a door', 'arrive', 'speak against someone', 'send for (something)', 'wash clothes',

'breastfeed', 'sew (something)', 'baste (something)', 'boil (something)', 'carry on back', 'dig shellfish', 'whip up food', 'blow up (a seal stomach)', 'pick seaweed', 'strip bark', 'flirt', and others. The majority of Haida intransitive verbs that appear with patient pronouns denote states. Among those illustrated with patient pronouns in the dictionary are 'ache', 'be lying down', 'be of two minds', 'be sad', 'be deaf', 'not have the heart to', 'be weak', 'be stout', 'have arthritis', 'be exhausted', 'be sleepy', 'be reluctant to go out in bad weather', 'be dizzy', 'be hungry', 'have intense pain', 'have cold feet', 'have a headache', 'have cold hands', 'be thin', 'be sick', 'feel miserable mentally', 'be high caste', 'be big', 'be good', and others. Actions are typically instigated by persons acting agentively, while states typically involve participants playing a passive or patient-like role. For most situations, then, an agent/patient system and an active/stative system yield similar patterns. Differences emerge only when semantic agenthood and activity do not coincide, or semantic patienthood and stativity do not coincide.

In Haida, agent pronouns do appear with a number of stative verbs, such as 'be suspicious', 'be sitting', 'be in residence', 'rest', 'be somewhere' and 'be awake'.

(27) HAIDA AGENT WITH STATE — Levine 1977a: 183

gway-ay	*gu*	*ʔu*	*ɬa*	*ʔiǰ-inn-i.*
island-the	on	FOREGROUND	1SG.AGENT	exist-PAST-old

'I (AGENT) was out on the islands.'

States like these differ from those like 'be dizzy' or 'be sad' in that they are seen as instigated by the person involved. The occurrence of grammatical agent pronouns with such states suggests that the Haida system is better described as an agent/patient one (with grammatical categorization based on the semantic role of the participant) than as an active/stative one (based on the aspect of the verb). The conclusion is reinforced by the occurrence of patient pronouns with certain verbs denoting events, such as 'fall', 'make a verbal mistake', 'get soaked through', 'get cramps'.

(28) HAIDA PATIENT WITH EVENT — Lawrence 1977: 180

K'yuw-áa-st	*dii*	*dlawíi-gan.*
trail-the-from	1SG.PATIENT	fall-PAST

'I (PATIENT) fell off the walk.'

The semantic distinction of agency is a complex one. Semantic agents are typically instigators in control of their actions. In most contexts, instigation and control coincide. One who dances normally instigates and controls the dancing. In the relatively rare situations in which instigation and control do not cooccur, languages

differ in their categorization. In some the instigation is criterial; in others it is the control. One who hiccups, for example, might be seen as the instigator of the hiccups, but not in control. In languages of the Siouan family, such as Lakhota, the hiccupper is cast as a grammatical agent for the instigation, while in languages of the Pomoan family, the hiccupper is cast as a grammatical patient for the lack of control. In Haida, instigation generally takes precedence over control. Verbs meaning 'laugh', 'break something', 'swallow something' and 'tangle something' appear with grammatical agent pronouns even when the action is involuntary.

(29) INSTIGATION WITHOUT CONTROL: AGENTS — Lawrence 1977: 258, 217, 219

a. *Hláa* *uu* *k'ahgáng.*
1SG.AGENT FOREGROUND laughing
'I (AGENT) am laughing.'

b. *guhlga'áangwaay* *iik* *hl* *gut'üdan.*
chair.the into 1SG.AGENT break.by.sitting
'I (AGENT) broke the chair by sitting on it.'

c. *Skuts* *hl* *gúntl'aats'.*
bone 1SG.AGENT swallow
'I (AGENT) swallowed a bone.'

Neither the agent nor the patient category of an agent/patient system corresponds to either the subject or object category of a nominative/accusative system, nor to either category of an ergative/absolutive system. Transitive verbs in Haida need not contain one agent and one patient. Participants that would be cast as the grammatical subjects of verbs such as 'love' and 'like' in English are cast as grammatical patients in Haida, since they are not viewed as instigators.

(30) HAIDA TRANSITIVE PATIENTS — Lawrence 1977: 77, 147, 166

a. *dáng* *díi* *kuyáadaang.*
2SG.PATIENT 1.SG.PATIENT love
'I (PATIENT) love you (PATIENT).'

b. *dáng* *díi* *guláagang.*
2SG.PATIENT 1SG.PATIENT like
'I (PATIENT) like you (PATIENT).'

The semantic motivation behind Haida case choice is usually transparent, but the choice is not always predictable. A person who knows something is classified as a grammatical patient, but one who believes something is classified as a grammatical agent. It could be hypothesized that belief requires stronger will or instigation than knowledge, but a better explanation is rooted in idiomaticity and lexicalization. Levine notes that to 'believe' is literally to 'make true for oneself' (1977a: 135).

(31) HAIDA LEXICALIZATION — Levine 1977a: 135

a. *da* *gya-q̓id-s* *ğan* *di* *ʔunsʔid-a.*
2SG.AGENT INTRANSITIVE-carve-SUBORDINATE for 1SG.PATIENT know-MOOD
'I (PATIENT) know that you carve.'

b. *lʌ* *kil* *łʌ* *yah-da-ga.*
3PATIENT speech 1SG.AGENT true-DELIBERATE.CAUSATIVE-MOOD
'I (AGENT) believe his talk.' (literally: 'I make his words true to or for myself'.)

Like nominative/accusative and ergative/absolutive patterns, agent/patient patterns may appear in various parts of the grammar. While nominative/accusative and ergative/absolutive case marking are common on nouns, agent/patient and active stative case marking on nouns are rare. Such patterns are much more common on pronouns, especially bound pronominal affixes.

Among the few languages with agent/patient case suffixes on nouns are those of the Pomoan family of northern California (Mithun 1991). Even in these languages, only a small set of nouns can carry case markers. The nouns generally refer to human beings: primarily kinship terms, proper names, and a few nouns for persons ('old lady'). All pronouns referring to persons, however, are distinguished for case: agent, patient, or possessive. The Pomoan systems are much like the Haida system, in appearing chiefly on independent pronouns and being based on semantic role rather than aspect. They differ in some interesting details, however.

Where the Haida system gives priority to the instigation component of agency, the Pomoan systems are more sensitive to the control component. When a participant is portrayed as instigating but not controlling an action, patient case pronouns are used. Examples here are from Central Pomo.

(32) CENTRAL POMO INSTIGATION WITHOUT CONTROL: PATIENTS — Frances Jack, speaker

to· šč̌ukčiya 'I hiccuped'
to· ʔésʔesya 'I sneezed'
to· malášlašan 'I stumbled'
to· šyéšyew 'I'm trembling'

Central Pomo speakers have some choices in case that allow them to specify control. Certain verbs can appear with either agent or patient pronouns.

(33) CENTRAL POMO CASE CHOICE BY CONTROL — Frances Jack, speaker

Wéno ʔa· sdí·q̓	'I (AGENT) swallowed my medicine'
Qʰawé· qadó·n to· sdíq̓	'I (PATIENT) swallowed my chewing gum'
ʔa· maɬ̓ém.	'I (AGENT) stepped on it (intentionally)'
to· maɬ̓ém.	'I (PATIENT) stepped on it (accidentally)'
ʔa· sma mt́í·č̓	'I (AGENT) went to bed'
to· sma mt́í·čka	'I (PATIENT) must have fallen asleep' (=*ka* INFERENTIAL)
ʔa· k̓lú·k̓lu·w	'I (AGENT) coughed (intentionally)'
to· k̓lú·k̓lu·w	'I (PATIENT) coughed (involuntarily)'
ʔa· cʰném	'I (AGENT) ran into it'
to· cʰném	'I (PATIENT) bumped into it (not watching)'

In Central Pomo, the grammatical patient case is in some ways the marked case. Formally, patient-case nouns are identified by a suffix, but agent-case nouns are unmarked. The third person patient case pronouns can be seen to be derived from the basic agent forms with the addition of case suffixes. The role of patient is semantically marked as well. To be cast as a grammatical patient, a person must be not only out of control but also significantly affected. They must be experiencers. Inherent states, those that characterize the essence of a person, are not portrayed as affecting that person. With those, unmarked agent forms are used.

(34) CENTRAL POMO INHERENT STATES: AGENTS — Frances Jack, speaker

ʔa· ʔe baɬ̓ʰé	'I'm big'
ʔa· ʔe kú·č̓	'I'm little'
ʔa· ʔe qól	'I'm tall'
ʔa· ʔe p̓čóy	'I'm short'
ʔa· ʔe yá·	'I'm strong'
ʔa· ʔe k̓ú·	'I'm a child'

Changes of state, events of which one might be aware, appear with patient pronouns. Being inherently skinny or alive are expressed with unmarked agent pronouns, while becoming skinny or recovering from illness are expressed with patient pronouns.

(35) CENTRAL POMO INCHOATIVES — Frances Jack, speaker

a. *ʔa·* *ʔe* *kʰaɬ̓úl.*
1SG.AGENT COP bony
'I (AGENT) am skinny.'

b. *kaɬ̓úl-aq-a·d=a* *to·.*
bony-INCH-IMPRF=IMM 1SG.PATIENT
'I (PATIENT) am losing weight.'

c. *ʔa·* *ʔé* *qašóy.*
1SG.AGENT COP alive
'I (AGENT) am alive.'

d. *to·* *qašóy-an.*
1SG.PATIENT alive-IMPRF
'I (PATIENT) recovered.'

The criterial feature of affectedness limits the class of potential grammatical patients. Only human beings (or personified animals), those with whom speakers may empathize, are ever cast as grammatical patients.

(36) CENTRAL POMO EMPATHY AND CASE — Frances Jack, speaker

a. *Mú·tu* *ʔa·* *hk̓úm.*
3SG.PATIENT 1SG.AGT kill
'I killed him (PATIENT).'

b. *Mu·l* *ʔa·* *hk̓úm.*
3SG 1SG.PATIENT kill
'I killed it [a bee] (unmarked).'

If the effect of a situation is not evident or of interest to the speaker, the victim is not cast as a grammatical patient. A number of verbs that occur with patient pronouns in the first person occur only with unmarked (agent) pronouns in the third. Speakers do not presume to know what another person feels.

(37) CENTRAL POMO EMPATHY — Frances Jack, speaker

a. *to·* *ma·* *yá·q̓* *ɬʰí-n.*
1SG.PATIENT stuff know not-IMPRF
'I (PATIENT) am crazy or foolish.'

b. *Mu·l* *ma·* *yá·q̓* *ɬʰí-n.*
3SG stuff know not-IMPRF
'He is crazy or foolish.'

c. *to·* *smá* *pʰ-ɬ̓a=·.*
1SG.PATIENT sleep visually-feel=IMMEDIATE
'I (PATIENT) am sleepy.'

d. *Mu·l* *smá* *pʰ-ɬ̓a=·.*
3SG sleep visually-feel=IMMEDIATE
'She is sleepy.'

Agent/patient systems are overwhelmingly more common in North America than active/stative ones, though the two types have not always been distinguished in language descriptions. A combination of agent/patient and active/stative patterns can be seen in the Iroquoian languages. As noted earlier, all verbs in Tuscarora contain pronominal prefixes referring to their core arguments. One set represents agents. (Neuters are not marked in transitive verbs if a non-neuter argument is also present.)

(38) TUSCARORA AGENT PRONOUNS — Elton Greene, speaker

k-rì·yu-s	*k-aʔn-à·wᵠ-s*
1AGENT-kill-IMPRF	1AGENT-MIDDLE-be.in.water-IMPRF
'I'm killing (it)'	'I'm swimming, bathing'

k-túhar	'I'm washing (it)'	*k-athrᵠhwá·kwas*	'I'm turning'
í·-k-weh	'I'm speaking'	*k-ʔtikwáhnᵠh*	'I'm sewing'
k-arᵠʔna·tš	'I'm blowing'	*k-aʔnᵠ́·ryᵠs*	'I'm breathing'
í·k-hra·tš	'I'm counting'	*k-rakyè·was*	'I'm wiping (it)'
k-nᵠ́·ʔnᵠh	'I'm feeding (it)'	*k-kuwanáhthaʔ*	'I'm celebrating'
k-arè·rúheʔ	'I'm running'	*í·-k-ha·ʔw*	'I pick it up'
k-íhrhaʔ	'I drink (it)'	*k-nᵠhakᵠríʔnaws*	'I'm roasting corn'

A second set of pronominal prefixes represents grammatical patients of either intransitive or transitive clauses.

(39) TUSCARORA PATIENT PRONOUNS — Elton Greene, speaker

wak-rì·yu-s	*wak-hskà·r-ᵠh*
1PATIENT-kill-IMPRF	1PATIENT-be.jealous-STATIVE
'(It)'s killing me'	'I'm jealous'

wak-atkyè·yuʔ	'I don't feel good'	*wak-atšútkhu·*	'I'm rich'
wak-nᵠ́hwa·ks	'I'm sick'	*wak-nᵠ́·hraraʔr*	'I'm dirty'
wak-ihé·yᵠ·	'I'm dead'	*wak-hráwhᵠhθ*	'I'm lonesome'
wak-ᵠhré·tis	'I'm hungry'	*wak-tšhaʔrá·ksᵠ·*	'I am cross'
wak-hshà·yᵠh	'I am slow'	*wak-aʔneθwé·kih*	'I want (it)'
wak-yetkáhneʔ	'(It)'s chasing me'	*wak-tikᵠhrá·ksᵠhθ*	'I am unhappy'
wak-skà:rᵠh	'I'm jealous'	*wak-atštù·rᵠʔ*	'I'm hurrying'

If a human beneficiary is involved, this argument is expressed with a patient pronoun.

Transitive verbs contain pronominal prefixes referring to both agent and patient. In some cases the components of these transitive pronouns can still be discerned.

(40) TUSCARORA TRANSITIVE PRONOUNS — Elton Greene, speaker

wahrakyé·nᵠ·ʔ	*wahrayé·nᵠ·ʔ*	*ᵠkyé·nᵠ·ʔ*
waʔ-hrak-yé·nᵠ·-ʔ	*waʔ-hra-yenᵠ·-ʔ*	*waʔ-wak-yenᵠ·-ʔ*
FACTUAL-he/me-hold-PRF	FACTUAL-he-hold-PRF	FACTUAL-me-hold-PRF
'he held (arrested) me'	'he held (it)'	'(it) held me'

The transitive pronoun *hrak-* 'he/me' contains components *hra-* 'he' and *-ak* 'me'.

The Tuscarora system is based primarily on an agent/patient distinction rather than an active/stative one. Agent pronouns appear not just with events (38), but also with states that are instigated or controlled by their participants (41) and states that are inherent. Patient pronouns appear not only with states (39), but also with events (42).

(41) TUSCARORA AGENTS WITH STATES — Elton Greene, speaker

í·-k-taʔtš	'I was lying down'	*k-yè·rih*	'I think'
k-íʔrᵠʔ	'I'm home'	*k-ᵠ́nheʔ*	'I'm alive'
k-kwá·tis	'I'm a young man'	*k-kuwá·nᵠ·*	'I'm chief'
k-yᵠʔné·ri·	'I know'	*k-kwísneʔ*	'I'm strong'
k-íhsᵠh	'I'm ugly'	*k-kwà·nihst*	'I'm handsome'

(42) TUSCARORA PATIENTS WITH EVENTS — Elton Greene, speaker

ᵠ-wak-í·tʔu·-ʔ	'I'll go to sleep'	*waʔ-wak-tù·rᵠʔ*	'I failed'
wak-tᵠhtáʔᵠh	'I got poor'	*yú·ʔne·ks*	'it is burning'

Yet aspect also plays a role in the Tuscarora system. Tuscarora verbs appear in three aspects, marked by (irregular) suffixes: perfective, imperfective, and stative. Verbs denoting states like *-ihs-* 'be ugly' have only stative forms. With verbs denoting events, the stative form is used for ongoing activities or for perfects, that is, states resulting from an earlier events, like 'I have cut it' and 'it is swollen' in (43). (The Iroquoian aspectual system is described in section 3.8.2.)

(43) TUSCARORA ASPECTS — Elton Greene, speaker

PRF	*wáʔkhreʔn*	'I (did) cut it'	*ᵠʔnúhneʔ*	'it swelled up'
IMPRF	*khrè·nas*	'I cut, I'm a surgeon'	*waʔnúhnᵠh*	'it is swelling'
STAT	*wakhrè·nᵠh*	'I have cut it'	*yuʔnúhnᵠʔ*	'it is swollen'

Of special interest here is the fact that a shift in aspect triggers a shift in case marking. While the perfective and imperfective aspects appear with agent pronouns, the statives appear with patient pronouns. Tuscarora thus shows a combination of agent/patient and active/stative patterns.

4.3.4 *Direct/inverse patterns*

A fourth kind of system can be seen in North America, termed **direct/inverse** (or simply **inverse**). Such systems were first noticed in Algonquian languages, so the Algonquian patterns are often taken as prototypical. The pattern can be illustrated with material from Ojibwa, an Algonquian language consisting of a series of dialects spoken across Quebec, Ontario, and the Plains. Examples cited here are Central Ojibwa from Walpole and Wicky (Ontario), drawn from work by Rhodes.

Core arguments in Ojibwa are expressed by pronominal prefixes and suffixes on verbs. Nouns carry no case marking. Four persons are distinguished in the pronominal affixes: first (1), second (2), third proximate (3), and third obviative (3'). As described by Bloomfield 1962: 38, 'the proximate third person represents the topic of discourse, the person nearest to the speaker's point of view, or the person earlier spoken of and already known'. (Obviation is further discussed in section 3.1.3.) Within first person, inclusive and exclusive are distinguished, and within third, animate and inanimate gender (section 3.3). Singular and plural number are distinguished. The pronominal affixes are fully referential, and verbs containing them constitute complete grammatical clauses in themselves. Some of the affixes can be seen in (44). Basic forms of the morphemes appear on the left, surface forms on the right. The suffix *-izi* indicates that the argument, here the dirty one, is animate.

(44) OJIBWA PRONOMINAL PREFIXES AND SUFFIXES — Rhodes 1976: 82

n-wi·nizi	>	*nwi·niz*	'I am dirty'
g-wi·nizi	>	*gwi·niz*	'you are dirty'
wi·nizi-w	>	*wi·nzi*	's/he is dirty'
n-wi·n-izi-min	>	*nwi·nzimi*	'we (EXCL) are dirty'
g-wi·n-izi-min	>	*gwi·nzimi*	'we (INCL) are dirty'
g-wi·n-izi-mw	>	*gwi·nzi*	'you all are dirty'
wi·nizi-w-ag	>	*wi·nziwag*	'they are dirty'
wi·nizi-w-an	>	*wi·nziwan*	'the other(s) is/are dirty'

From this paradigm alone it is impossible to determine what kind of case category these pronouns represent. They could be subjects, absolutives, or grammatical patients. Comparison of the first person forms in different verbs indicates that the pronouns do not distinguish case at all. The same form *n-* is used for what would be subjects ('I bring her') and objects ('she brings me'); for ergatives ('I bring it') and absolutives ('I am embarking'); and for agents ('I am embarking') and patients ('I am dirty').

(45) OJIBWA CASE CATEGORIES? — Rhodes 1976

n-wi·nizi	>	*nwi·niz*	'I am dirty'
n-boozi	>	*nbo·z*	'I am embarking'
n-bi·d-oon	>	*nbi·do·n*	'I bring it'
n-wa·bam-igw-i	>	*nwa·bmigo·*	'I am seen'
n-bi·n-a·	>	*nbi·na·*	'I bring him/her'
n-bi·n-igw	>	*nbi·nig*	's/he brings me'

Grammatical relations are specified instead by a pair of verbal suffixes.

(46) OJIBWA DIRECT AND INVERSE SUFFIXES — Rhodes 1976: 85-6

n-bi·n-a·	>	*nbina·*	'I bring him/her'
n-bi·n-igw	>	*nbi·nig*	's/he brings me'
g-bi·n-a·	>	*gni·na·*	'you bring him/her'
g-bi·n-igw	>	*gbi·nig*	's/he brings you'
w-bi·n-a·-an	>	*wbi·na·n*	's/he brings the other'
w-bi·n-igw-an	>	*wbi·ngo·n*	'the other brings him/her'

The system is based on the expected direction from which situations are presented by speakers. Speakers tend to present events from their own point of view or that of their listener rather than that of some other person or object: *I got a package* or *Did you see that guy?* rather than *A package came to me* or *Was that guy seen by you?* In Algonquian languages, situations are more often presented from the point of view of the proximate argument, the most topical third person, than that of the obviative, 'the other'. The direct suffix *-a·* indicates that the direction of action is as expected.

(47) OJIBWA DIRECT VERBS: *-a·* — Rhodes 1976: 86

1/3	*n-bi·n-a·*	>	*nbi·na·*	'I bring him/her'
	n-bi·n-a·-na·ni	>	*nbi·na·na·*	'we (EXCL) bring him/her'
	g-bi·n-a·-na·ni	>	*gbi·na·na·*	'we (INCL) bring him/her'
2/3	*g-bi·n-a·*	>	*gbi·na·*	'you bring him/her'
	g-bi·n-a·-wa·	>	*gbi·na·wa·*	'you all bring him/her'
3/3'	*w-bi·n-a·*	>	*wbi·na·n*	's/he brings the other'
	w-bi·n-a·-wa·-an	>	*wbi·na·wa·n*	'they bring the other'

Of course not all events originate with the speaker or hearer. The inverse suffix *-igw* indicates that the direction of action is unusual.

(48) OJIBWA INVERSE VERBS: *-igw* Rhodes 1976: 86-7

3/1	*n-bi·n-igw*	>	*nbi·n-ig*	's/he brings me'
	n-bi·n-igw-ina·ni	>	*nbi·ngona·*	's/he brings us (EXCL)'
	n-bi·n-igwina·ni	>	*gbi·ngona·*	's/he bring us (INCL)'
3/2	*g-bi·n-igw*	>	*gbi·n-ig*	's/he brings you'
	g-bi·n-igwiwa·	>	*gbi·ngowa·*	's/he brings you all'
3'/3	*w-bi·n-igw-an*	>	*wbi·n-go·n*	'the other brings him/her'
	w-bi·n-igw-iwa·	>	*wbi·ngowa·n*	'the other brings them'

The direct and inverse suffixes are the only indications of grammatical relations even when full noun phrases are present. As can be seen below, noun phrases bear no case marking, only markers of obviation and/or number. The noun *wwi·dgema·gnan* 'his wife' has the same shape whether the wife is the hearer or the one heard.

(49) OJIBWA NOUN PHRASES Rhodes 1990: 111

a. *Wgi·-no·ndawa·n* *wwi·dgema·gnan.*
o-gi·-no·ndaw-a·-an *o-wi·dgema·gan-an*
3-PAST-hear-DIRECT-3' 3-spouse-OBVIATIVE
'He heard his wife (OBVIATIVE).'

b. *Wgi·-no·nda·go·n* *wwi·gdema·gnan.*
o-wi·-no·ndaw-igo-an *o-wi·dgema·gan-an*
3-PAST-hear-INVERSE-3' 3-spouse-OBVIATIVE
'His wife (OBVIATIVE) heard him.'

Verbs involving only speech act participants (speakers and/or listeners) are termed 'local'. For these, special direct and inverse markers are used. In many languages with direct/inverse systems, first persons outrank second on the hierarchy or they are equal. In the Algonquian languages, second persons are analyzed as outranking first.

(50) OJIBWA DIRECT LOCAL VERBS: *-i* Rhodes 1976: 85

2/1	*g-bi·n-i*	>	*gbi·ž*	'you bring me'
	g-bi·n-i-mw	>	*gbi·žim*	'you all bring me'
	g-bi·n-i-min	>	*gbi·žmi*	'you (SG/PL) bring us'

(51) OJIBWA INVERSE LOCAL VERBS: *-ini* Rhodes 1976: 86

1/2	*g-bi·n-ini*	>	*gbi·nin*	'I bring you'
	g-bi·n-ini-mw	>	*gbi·nnim*	'I bring you all'
	g-bi·n-igw-i	>	*gbi·ngo·*	'we bring you'
	g-bi·n-igw-i-mw	>	*gbi·ngo·m*	'we bring you all'

The Ojibway hierarchy is thus:

HEARER > SPEAKER > PROXIMATE > OBVIATIVE

It might be suggested that the Algonquian inverse constructions are essentially passives, whose function is to promote semantic patients to subject status. The inverses differ from standard passives in two ways, however. First, unlike passives they are syntactically obligatory, as defined by an explicit hierarchy. In a transitive verb with a first person agent and second person patient, speakers must use inverse morphology. Similarly, in a verb with obviative agent and proximate patient, the inverse must be used. In the opposite situations, where the agent is second person and the patient first, or the agent is proximate and patient obviative, the inverse cannot be used. Second, one of the major effects of passivization is the elimination of a semantic agent from core argument status. When transitive verbs are passivized, the result is an intransitive. Inverse verbs, by contrast, are not detransitivized. Both the semantic agent and semantic patient are still specified by pronominal affixes within the verb, as can be seen in the paradigms above. In fact Ojibwa, like other Algonquian languages, contains a passive construction that is distinct from the inverse. It is used only when an agent is nonspecific. No agent noun phrase can be present in a passive clause. In inverse constructions the agent must be specific and may be further identified by a noun phrase.

(52) OJIBWA PASSIVE AND INVERSE Rhodes 1976: 120, 202

PASSIVE *wa·bama·w.*
'He is seen.'

INVERSE *wa·bmigo·n* *niw* *ninwan.*
the.other.sees.him that.OBVIATIVE man.OBVIATIVE
'The man sees him.'

The inverse is actually more than a mechanical operation on particular arrays of morphological categories. Not every clause need contain a proximate argument, although most do. (In a sample of 150 transitive clauses from Ojibwa texts, Dryer

(1992: 132) found three clauses with only obviatives.) Interestingly, transitive clauses with two obviative core arguments may be either direct or inverse, depending on the relative status within the discourse of the two obviative participants. Rhodes (p.c. 1986) notes the sentence below from an Ottawa Ojibwa text. When a chief warns his son about a certain well-dressed man, the chief is proximate and both the son and the well-dressed man are grammatically obviative, as can be seen from the obviative suffixes on the noun phrases referring to them. The direction markers indicate, however, that the obviative son has precedence over the obviative well-dressed man.

(53) OJIBWA DOUBLE OBVIATIVE CONSTRUCTION — Rhodes p.c. 1986

W-gi·-gnahma-a·-n	*niw*	*w-gwis-an*
3-PAST-warn-DIRECT-3'	the.OBVIATIVE	3-son-OBVIATIVE

'He$_{proximate}$ warned (DIRECT) his son$_{obviative}$

ga·	*wi·*	*nkwetw-a·-si-k*
not	EMPHATIC	answer-DIRECT-NEGATIVE-3'/3'

not to answer (DIRECT)

niw	*bi-ggwejm-igo-d*	*manda·gninw-an*
the.OBVIATIVE	come-ask-INVERSE-3'/3'	gentleman.OBVIATIVE

the well-dressed man$_{obviative}$ coming to ask (INVERSE) him$_{obviative}$

iw	*ji-zhwenm-igo-d.*
that	FUTURE-bless-INVERSE-3'/3'

if he$_{obviative}$ might bless (INVERSE) him$_{obviative}$.'

The term *inverse* has been used to describe a number of other systems in North American languages. They differ in varying degrees from those of the Algonquian languages, which are usually taken as prototypical. The system of Kutenai, an isolate, is similar but restricted to third person (Dryer 1982a,b, 1984, 1987). The Tiwa and Towa languages of the Kiowa-Tanoan family also contain constructions that have sometimes been described as inverse (Klaiman 1989, 1991, 1992, 1993). Core arguments are specified by verbal prefixes that distinguish three persons and three numbers. Picurís, seen below, is a dialect of Northern Tewa spoken in New Mexico.

(54) PICURIS PRONOMINAL PREFIXES — Zaharlick 1982: 37-41

ta-me-ʔqn	*ʔa-me-ʔqn.*
1SG-go-PAST	2SG-go-PAST
'I went.'	'You went.'

ʔą-mǫn-ʔqn.	*may-mǫn-ʔqn.*
1/2-see-PAST	2/1-see-PAST
'I saw you.'	'You saw me.'

Third persons are unmarked except when they are the objects of a verb with first or second person subject. Then three genders or noun classes are distinguished.

(55) PICURIS THIRD PERSONS — Zaharlick 1982: 35-41

me-ʔqn.
go-PAST
'(S/he) went.'

mǫn-ʔqn.	*ʔa-mǫn-ʔqn.*
see-PAST	2SG-see-PAST
'(S/he) saw (him/her).'	'You saw (him/her).'

ti-mǫn-ʔqn.	*ʔa-mǫn-ʔą.*
1SG/A-see-PAST	2SG/A-see-PAST
'I saw him.'	'You saw him.'

Passives are formed with the suffix *-mia*. Subjects of passives are marked by intransitive pronominal prefixes. An agent noun phrase, if present, is oblique.

(56) PICURIS PASSIVE — Zaharlick 1982: 35

mǫn-mia-ʔqn	*(sənene-pa).*
see-PASSIVE-PAST	man-OBLIQUE

'S/he was seen (by the man).'

The Picurís passive is used more often than passives in many other languages. In certain contexts it is obligatory, when a third person acts on a first or second.

(57) PICURIS OBLIGATORY PASSIVES — Zaharlick 1982: 40-1

Ta-mǫn-mia-ʔqn	*sənene-pa.*	*ʔa-mǫn-mia-ʔqn*	*sənene-pa.*
1SG-see-PASSIVE-PAST	man-OBLIQUE	2SG-see-PASSIVE-PAST	man-OBLIQUE
'The man saw me.'		'The man saw you.'	

There is no question that these constructions are formally passive. The pronominal prefixes are intransitive rather than transitive, and the agent is formally oblique.

When both arguments are third person, either active or passive is possible.

(58) PICURIS THIRD PERSON TRANSITIVES — Zaharlick 1982: 35

sənene	*mǫn-ʔǫn.*
man	see-PAST
'The man saw him.'	

mǫn-mia-ʔǫn	*sənene-pa*
see-PASSIVE-PAST	man-OBLIQUE
'He was seen by the man.'	

When a first or second person acts on a third, the passive cannot be used.

The Picurís passive resembles the Algonquian inverses in its obligatoriness in contexts defined by a hierarchy of expected mental starting points. As in Algonquian, speaker and hearer outrank others on the hierarchy. Core case is not marked on noun phrases. Grammatical relations are indicated instead by a directional suffix on the verb. Unlike Algonquian inverses, however, the Picurís construction is formally intransitive. If an agent noun phrase is present, it is marked as oblique.

The Picurís hierarchy is less detailed than those in Algonquian languages: first and second persons are unranked with respect to each other, and there is no formal distinction among third persons comparable to the Algonquian proximate/obviative. Yet the same kinds of factors that underlie the Algonquian categorization of third person arguments as proximate or obviative, and that ultimately contribute to the use of the inverse there, determine the use of the passive in Picurís.

Several other North American languages show similar strategies for marking grammatical relations, whereby passivization is either obligatory or ungrammatical in contexts defined by a hierarchy of expected mental starting points. Among them are Nootka, discussed by Whistler 1985 and Emanatian 1988, and various Salish languages, discussed by Jelinek & Demers 1983, Jacobs 1994, and others.

4.3.5 *A tripartite pattern*

A final pattern in the specification of grammatical relations is worthy of mention not because it is pervasive, but because it is rare cross-linguistically. In nominative/accusative systems, intransitive agents (*I left*), intransitive patients (*I fell*), and transitive agents (*I found her*) are merged in a single category: the subject. In ergative/absolutive systems, intransitive agents, intransitive patients, and transitive patients are merged in the absolutive category. In agent/patient systems, intransitive and transitive agents are merged in the grammatical agent category, and intransitive and transitive patients are merged in the grammatical patient category. As a result of the various mergers, each system distinguishes just two core categories (apart from a possible indirect object or dative). It has often been suggested that such mergers are optimally efficient, since in all of the systems, whenever two core arguments could appear within the same clause (a transitive), they have distinct forms. Other logically possible arrangements do exist, with fewer mergers and more categories.

The specification of grammatical relations in Nez Perce, a Sahaptian language of Washington, Oregon, and Idaho, has been described in detail by Rude (1982, 1985a,b, 1986a,b, 1991a, 1992). Examples cited here come from texts collected by Phinney (1934) and cited by Rude. Case marking on Nez Perce nouns is unusual in distinguishing three distinct core categories (excluding a possible dative). Agents of transitive clauses are marked with the suffix *-nim*.

(59) NEZ PERCE ERGATIVE *-nim* — Phinney 1934: 94.16 in Rude 1985: 89

x̣áx̣aas-nim	*hitwekáixce.*
grizzly-ERGATIVE	he is chasing
'Grizzly is chasing me.'	

Intransitive subjects carry no case suffix.

(60) NEZ PERCE INTRANSITIVE SUBJECT — Phinney 1934: 95.9 in Rude 1985: 89

x̣áx̣aac	*hiwéhyem.*
grizzly	he has come
'Grizzly has come.'	

Objects of transitive clauses carry the accusative suffix *-ne*.

(61) NEZ PERCE OBJECT *-ne* — Phinney 1934: 82.1 in Rude 1985: 89

ʔóykalo-m	*titóoqan-m*	*páaqaʔancix*	*x̣áx̣aas-na.*
all-ERGATIVE	people-ERGATIVE	they respect him	grizzly-ACCUSATIVE
'All people respect Grizzly.'			

As Rude points out, Nez Perce case marking is heavily exploited for stylistic purposes. If the patient of a semantically transitive event is not sufficiently topicworthy, it is not eligible for core status. In (62), the camas was peripheral to the discussion, so it is not cast as a grammatical object, and the sentence is intransitive.

(62) NEZ PERCE NON-CORE PATIENT — Phinney 1934: 185.10 in Rude 1985: 86

páax̣loo	*haʔáyat*	*hix̣níisiix*	*qémes.*
five	women	they are digging	camas
'Five women are digging camas.'			

Tripartite systems such as this, with three distinct core case categories (in addition to a dative) are rare, probably because they are not maximally efficient. The three need never be distinguished within a clause, because no more than two can cooccur.

4.4 Pattern combinations

Grammatical relations may be indicated in several areas of language structure: in case marking on nouns or noun phrases, in the shapes of independent pronouns, in pronominal affixes on verbs, in direction marking on verbs, and in certain syntactic patterns such as word order and clause combining. In some languages, grammatical relations are specified in only one of these areas. In the Chumashan, Chinookan, and Iroquoian languages, for example, case is distinguished only by pronominal affixes on verbs. In many languages, however, grammatical relations are specified simultaneously in several parts of the grammar. The pattern in each area may be the same, as in Lake Miwok, where both noun case markers and pronouns show a nominative/accusative pattern. They may also differ, but only certain combinations of patterns are found and never their opposites. The combinations that occur can be explained in terms of the fundamental features underlying the different case categories.

4.4.1 *Nominative/accusative and ergative/absolutive combinations*

Combinations of nominative/accusative and ergative/absolutive case marking occur throughout the world. A common combination is a nominative/accusative pattern on pronouns and an ergative/absolutive pattern on noun phrases.

This combination can be seen in Alsea, a language of Oregon. Grammatical relations are indicated in Alsea by dependent pronouns and by case markers on noun phrases. The patterns are discussed in Buckley 1987, 1993, and 1994. Alsea is no longer spoken, but extensive textual material was collected by Frachtenberg in 1911 and 1913 (1917, 1920). Examples here come primarily from Buckley's analyses of the Frachtenberg material.

The Alsea dependent pronouns follow a nominative/accusative pattern. The subject pronouns are clausal enclitics. First, second, and third persons are distinguished; inclusive and exclusive first person; and singular, dual, and plural number. Third person singular subjects are unmarked. As can be seen in (1), the first person singular subject 'I' is *=(ə)n* whether it is the agent or patient of an intransitive ('I will go', 'I am not afraid') or the agent of a transitive ('I will always look after you').

(1) ALSEA SUBJECT ENCLITICS — Frachtenberg 1920: 66, 40, 174

a. *k=ən* *ʔay-áy-m.*
IRREALIS=1SG.SUBJECT go-INCHOATIVE-IRREALIS.INTR
'I will go.'

b. *í·msta* *tám=ən* *łiyaʔ* *c̓ə́lú·x̣ʷ-ax̣.*
therefore and=1SG.SUBJECT NEGATIVE fear-COMPLETIVE
'And for that reason I am not afraid.'

c. *k=ən* *hík̓a* *qaʔálíˀa* *ɬ-hayˀá·n-aw-t-u·* *qa=qán.*
IRREALIS=1SG.SUBJECT just always TR-look-CONT-TR-2SG.OBJECT ERG=1SG
'I will always look after you.'

The object pronouns are verbal suffixes.

(2) ALSEA OBJECT SUFFIXES — Frachtenberg 1920: 120, 72, 94

a. *pst=qʷəʔ-úy-əmc*
2DU.SUBJECT-enter.canoe-INCHOATIVE-1OBJECT
'Take me into your canoe!'

b. *k=nú·ns-ətx̣-u·* *qa=s* *hí·cləm.*
IRREALIS-eat-PROGRESSIVE-2OBJECT ERGATIVE=REFERENTIAL people
'The people will eat you.'

c. *tam* *k=awk=əc* *sʰáy-nx̣* *qawx̣* *ɬkəlɬ̓í·s=əks*
and HABITUAL=in=HABITUAL put-3OBJECT above fire=DATIVE
'So he put it on top of the fire.'

If the object is dual or plural, number is indicated by the same clausal enclitics used for dual and plural subjects. The object number marker precedes the subject marker.

(3) ALSEA OBJECT NUMBER — Frachtenberg 1920: 174

k=ə́p=ən *kə́st-u·.*
IRREALIS=2PL.OBJECT=1SG.SUBJECT leave-2OBJECT
'I will leave you all.'

Indirect objects are also specified by verbal suffixes.

(4) ALSEA INDIRECT OBJECT SUFFIX — Frachtenberg 1920: 182, 182, 198

a. *k=sáw-i·-cu·* *qa=xám* *sɣ́·lhaḱi·yu·.*
FUTURE=help-INCHOATIVE-2SG.INDIRECT.OBJECT ERGATIVE=2SG.POSS spirit
'Your guardian spirit will help you.'

b. *kis* *qu·m-áy-u·-ɬ̣-i·* *x̣a=cqɬ̣s-k.*
RES behind-INCH-TRANSLOCATIVE-3INDIRECT.OBJECT-TR ERGATIVE=dog-3.POSS
'Then his dog would follow him.'

c. *k=əɬx=ás* *miɣhɣ·* *cqé·wu-ɬ-i·* *qa=s* *púpənhaw·*.
RES=3.PL=RES now approach-3INDIRECT.OBJECT-TR ERG=REF ball
'So then the ball came close to them.'

Case marking on noun phrases follows an ergative/absolutive pattern. Ergatives are marked with a proclitic *qa=* or *χa=* usually before a determiner. (Determiners consist of an optional spatial deictic (*ku-*, *ta-* *a-*) and a referential *-s* or possessive.)

(5) ALSEA ERGATIVE CASE ON NOUN PHRASES Frachtenberg 1920: 47, 92
a. *tamiɣhɣ·* *ɬu·qut-í·-nχ* *qa=s* *múlupciní·sla.*
and.now take-TR-3OBJECT ERGATIVE=REF coyote
'Then Coyote took it.'

b. *má·qax-ay-nχ* *χa=kú-s* *mukwaʔsli·*.
refuse.marriage-INCHOATIVE-3OBJECT ERGATIVE=PROXIMAL-REF woman
'The woman refused to marry him.'

Independent emphatic pronouns bear the same ergative case marking as nominals.

(6) ALSEA ERGATIVE CASE ON EMPHATIC PRONOUN Frachtenberg 1920: 48
χə=kc̓-áʔa *qa=ní·x.*
2SG.SUBJECT=put-TR.IRREALIS ERGATIVE=2SG
'You put it on!'

Absolutive noun phrases show no overt case marking. In (7) the single arguments of the intransitives 'stay motionless' and 'go around' begin with bare determiners.

(7) ALSEA ABSOLUTIVE CASE IN INTRANSITIVES Frachtenberg 1920: 40, 42
a. *ɬiyaʔ* *na·mk* *híc̓a* *á·likən* *yá·c-χ* *a-s* *múlupciní·sla.*
not ever just motionless stays-CMPL DISTAL-REF Coyote
'Coyote (ABSOLUTIVE) never remained motionless.'

b. *haw=ks* *məckwáhalχ* *a-s* *múlupciní·sla.*
everywhere=DATIVE continually.goes.around DISTAL-REF Coyote
'Coyote (ABSOLUTIVE) was constantly walking around everywhere.'

Semantic patients of transitives appear in the same unmarked absolutive case.

(8) ALSEA ABSOLUTIVE CASE IN TRANSITIVES Frachtenberg 1920: 82, 120
a. *k=ən* *nu·ns-áʔa* *miɣhɣ·* *ku-s* *cu·tái·s.*
FUTURE=1SG.SUBJECT eat-TR now PROXIMAL-REF salmon
'I will eat these salmon (ABSOLUTIVE) now.'

b. *χxaut-áy-nχ=ən* *a-sín* *kí·yai·.*
drop-INCH-3.OBJECT=1SG.SUBJECT DISTAL-1SG.POSSESSIVE knife
'I dropped my knife (ABSOLUTIVE).'

The relative status and topicality of the participants have no effect on case (Buckley 1987: 32). In (9) the ergative is inanimate, and the absolutive is first person.

(9) ALSEA INANIMATE ACTING ON FIRST PERSON PATIENT Frachtenberg 1920: 132
χa=s *xwɬ̓·si·yu·* *ɬ-imí·st-al-t-əmc-χ.*
ERGATIVE=REF smoke TR-thus-DURATIVE-STATIVE-1SG.OBJECT-COMPLETIVE
'Smoke does that to me.'

Ergative marking is apparently restricted to referential agents. The verb 'dream' in (10) is transitive, as can be seen from the object suffix *-əmc* 'me', but *u·k* 'someone' is not ergative in the hypothetical clause in (10), marked by the irrealis *sis*.

(10) ALSEA NONREFERENTIAL AGENT Frachtenberg 1920: 43
sis *ú·keay* *sɨ́·lhak̓-ay-t-əmc.*
IRREALIS.COMPLEMENTIZER someone dream-INCHOATIVE-STATIVE-1SG.OBJECT
'If anyone should dream about me . . .'

Alsea contains a passive construction formed with a verbal suffix *-ɬn*. As would be expected, the patient subject of a passive is expressed with a subject pronoun. The agent noun phrase continues to be marked with an ergative proclitic.

(11) ALSEA PASSIVE Frachtenberg 1920: 24
tam=áɬx *miɣhɣ·* *ya·s-au-ʔyá-ɬn-χ* *χa=s* *ɬəyá·ct=əɬx.*
and=3PL.SUBJECT now say-DUR-ITER-PASSIVE-CMPL ERG=REF inhabitant=3PL
'Then they were spoken to by the inhabitants.'

A second type of nominative/accusative and ergative/absolutive combination is also common cross-linguistically. Case marking on nominals is ergative/absolutive, but clause-combining constructions show nominative/accusative patterns. This type can be seen in the Eskimoan languages. Examples cited here are Central Alaskan Yupik

from the speech of George Charles and Elizabeth Charles Ali, from Bethel, Alaska. Detailed descriptions of Yupik grammar are in Jacobson 1994 and Miyaoka 1995.

Case is indicated on nouns and demonstratives by suffixes. Absolutive is unmarked.

(12) YUP'IK ERGATIVE — George Charles, speaker

Angute-m	*tuqute-llru-a-a.*
man-ERGATIVE	kill-PAST-INDICATIVE.TRANSITIVE-3SG/3SG

'The man (ERGATIVE) killed it.'

(13) YUP'IK ABSOLUTIVE — Elizabeth Ali, speaker

a.

Una	*angun*	*kitur-tu-q*
RESTR.VISIBLE.this	man.ABSOLUTIVE	pass.by-INDICATIVE.INTR-3SG

'A man (ABSOLUTIVE) passed by.'

b.

Tuai-gguq	*qener-lu-ni*	*tauna*	*angun*
and.then=HRS	be.angry-SUBORD-3SG	RESTR.VIS.that.ABSOLUTIVE	man.ABSOLUTIVE

'So that man (ABSOLUTIVE) got angry . . .'

c.

tauna	*angun*	*kitur-k-iit.*
RESTR.VIS.that.ABSOLUTIVE	man.ABSOLUTIVE	pass.by-PARTICIPIAL.TRANSITIVE-3PL/3SG

'They passed that man (ABSOLUTIVE).'

As in many ergative systems, a high degree of transitivity is required for ergative marking. Grammatically transitive clauses normally contain identifiable (definite), specific, countable absolutive patients, like the pears in (14).

(14) YUP'IK GRAMMATICAL TRANSITIVE — Elizabeth Ali, speaker

Tauku-t	*atsa-t*	*tegu-k-ai.*
RESTR.VIS.that-PL	fruit-PL.ABSOLUTIVE	take.in.hand-PARTICIPIAL.TRANSITIVE-3SG/3PL

'He took those pears (ABSOLUTIVE).'

If the semantic patient is indefinite, non-specific, or a mass, the clause is grammatically intransitive and the patient noun oblique (ablative). The sentence below is grammatically intransitive, although it was translated with an English transitive.

(15) YUP'IK GRAMMATICAL INTRANSITIVE — Elizabeth Ali, speaker

Una	*angun*	*napa-mi*	*atsaq-nek*	*iqvar-lria*
RESTR.VIS.this	man.ABS	tree-LOC	fruit-ABLATIVE.PL	pick-PARTICIPIAL.INTR-3SG

'A man in a tree was picking pears (ABLATIVE).'

Grammatical relations are also marked in Yupik verbs. Core arguments are specified by pronominal suffixes that distinguish four persons, three numbers, and two cases. Intransitive verbs contain a pronominal suffix referring to one argument, and transitives a suffix referring to two.

The transitive suffixes are fused, or portmanteau morphemes, so that it is not always possible to segment the two pronominal elements. Close examination of the indicative pronominal paradigm does reveal an earlier ergative/absolutive pattern. The forms of some intransitive pronouns match those of transitive patients.

(16) SAMPLE OF YUP'IK INDICATIVE PRONOMINAL PARAGIDM

INTRANSITIVE	TRANSITIVES		(Compare)	
-nga 'I'	*-penga*	'you/me'	*-mken*	'I/you'
	-petegnga	'you two/me'	*-mtek*	'I/you two'
	-pecia	'you all/me'	*-mci*	'I/you all'
	-anga	'he or she/me'	*-ka*	'I/him, her, it'
	-agnga	'they two/me'	*-gka*	'I/them two'
	-atnga	'they all/me'	*-nka*	'I/them all'

Case marking on both nouns and pronouns thus shows an ergative/absolutive pattern.

A major device for linking clauses in Yup'ik is with verbal suffixes traditionally called 'mood' markers. The suffixes distinguish indicative, interrogative, optative, participial, subordinative, and six connective moods. The connective moods link adverbial clauses, with meanings 'because', 'whenever', 'although', 'if', 'when', and 'while'. An example of the use of the consequential connective 'because' is in (17).

(17) YUP'IK CONSEQUENTIAL CONNECTIVE — Elizabeth Ali, speaker

atauciq-mek	*tegu-qatarr-lini-lria,*
one-ABL	take-FUTURE-apparently-PARTICIPIAL.3SG

'It appeared that he was going to take one,

akuna-k-ai	*tuai,*	*kaigg-li-a-mi*
truly-PARTICIPIAL-3SG/3PL	well	be.hungry-maybe-CONSEQUENTIAL-3R.SG

perhaps because he was so hungry.'

The pronominal suffixes in the connective moods reflect an earlier nominative/accusative pattern. The forms of some intransitive suffixes match the forms of agent elements of transitive. This is the set of arguments that constitute subjects, the basis for nominative/accusative patterns.

(18) SAMPLE OF YUP'IK CONNECTIVE PRONOMINAL PARADIGM

INTRANSITIVE	TRANSITIVES		(Compare)	
-ma 'I'	*-mken*	'I/you'	*-vnga*	'you/me'
	-mtek	'I/you two'	*-vtegnga*	'you two/me'
	-mci	'I/you all'	*-vcia*	'you all/me'
	-mku	'I/him or her'	*-anga*	'he or she/me'
	-mkek	'I/them two'	*-agnga*	'they two/me'
	-mki	'I/them all'	*-atnga*	'they all/me'

The grammaticization of a subject category can thus be seen in the forms of the connective pronominal suffixes. It can also be seen in the patterning of certain clause-combining constructions. One mood, termed the subordinative, links clauses within a sentence or over a larger stretch of speech that express elements of a single event. The subjects of subordinative clauses must be coreferent with the subject of the main clause to which they are linked. We thus have a syntactic (or behavioral) pattern that is based on the recognition of a subject category. The pattern can be seen in (19). (The abbreviation R in the glosses identifies a special set of coreferential pronouns, whose reference is the same as that of the subject of a higher clause.)

(19) YUP'IK SUBORDINATIVE MOOD — Elizabeth Ali, speaker

iqva-rraar-lu-ni, *mui-rraar-lu-ku* *tauna* *qalta-ni*
pick-after-SUBORDINATIVE-3R.SG fill-after-SUBORDINATIVE-R/3SG that bucket-LOC
'After picking and filling the container,

atrar-lu-ni *napa-mek.*
descend-SUBORDINATIVE-3R.SG tree-ABL
he climbed down from the tree,

elli-nqegcaar-lu-ki *atauciq* *atsaq* *igg-ler-ani.*
put-completely-SUBORDINATIVE-R/3PL one fruit fall-PAST.CONTEMP-3SG
carefully replacing one pear that had fallen.'

4.4.2 *Nominative/accusative and agent/patient combinations*

Combinations of nominative/accusative and agent/patient patterns also appear in North America. Good examples come from the Muskogean family of the Southeast. (Discussions of grammatical relations in Choctaw and Chickasaw are in Munro & Gordon 1982 and Jelinek 1988). In the Muskogean languages, case suffixes on nouns show a nominative/accusative pattern, while pronominal affixes on verbs show an agent/patient pattern.

In Koasati, spoken in Louisiana and Texas, six cases are distinguished on nouns: nominative, accusative, locative, allative, inessive, and an unmarked 'autonomous' case, used for citation forms, genitives, vocatives, and objects of prepositions (Kimball 1991). The nominative case is used for subjects, whether they are functioning as semantic agents or patients, and whether the clause is intransitive or transitive.

(20) KOASATI NOMINATIVE CASE *-k* — Kimball 1991: 410, 391, 393

a. *yalí* *am-aw-ó·to-k* *cimpónc-o·to-k* *ónti-tow.*
here 1POSS-grandfather-ART-NOMINATIVE NAME-ART-NOMINATIVE come.SG-PAST
'Here my late grandfather, Jim Poncho, came.'

b. *cokfi-k* *am-oklá-k* *i-ho·pá-hc-on* *onká.*
rabbit-NOMINATIVE 1POSS-friend-NOMINATIVE 3AGT-be.hurt-IMPRF-DS.FOC be
'It is the case that my friend Rabbit is hurt.'

c. *mí·t-o-k* *ó·ła-t* *o·bittó-n* *łopó-toto-·li-mpá-hco-k.*
other-FOC-NOM arrive-CONN summit-ACC pass.by-REALIS-DEDUC-HEARSAY-HAB-PAST
'Still another arrived there and passed the summit, so it is said.'

The accusative case *-n* is used for objects.

(21) KOASATI ACCUSATIVE CASE *-n* — Kimball 1991: 392

fó·si *lawísta-si-n* *tabá·ka-t* *í·bit* *ipá-hci.*
bird small.PL-DIM-ACCUSATIVE catch.PL-CONN kill-CONN eat-PROG
'It catches, kills, and eats small birds.'

Grammatical relations are also indicated by pronominal affixes on verbs. Agent, patient, and dative cases are distinguished; first, second, and third persons; and singular and plural number. Third person agents and patients are unmarked. The contrast between the first person agent *-li* and patient *ca-* can be seen in (22).

(22) KOASATI AGENT AND PATIENT PRONOMINAL AFFIXES — Kimball 1991

a. *nokcó·ba-li-t* *ca-nokco·bá-·ci-t*
stop-1AGENT-PAST 1PATIENT-stop-COMPULSIVE-PAST
'I stopped.' '(It) stopped me.'

b. *ó·ła-li-nò* *ca-lóhk*
be.there-1AGENT-just 1PATIENT-be.tired
'I just got there.' 'I'm tired.'

The criterial feature for agency status in Koasati appears to be control.

(23) KOASATI CONTROL — Kimball 1991: 252

nìhli-l	'I nod'	*ca-nìhl*	'I'm nodding off'
nó·ci-li-t	'I slept'	*ca-nó·ci-t*	'I fell asleep'

The third core case category represented by Koasati pronominal affixes is a dative.

(24) KOASATI DATIVES — Kimball 1991: 254, 131

st-am-íl
INSTR-1SG.DATIVE-arrive.here
'Bring it to me!'

Dative pronouns can also represent the single argument of an intransitive.

(25) KOASATI DATIVE IN INTRANSITIVE — Kimball 1991: 133

am-ayóhki-·s
1SG.DATIVE-feel.acrophobia-PAST
'I have a fear of heights'; 'I feel trepidation'

Datives contrast with patients in highlighting the affectedness of the intransitive argument, appearing in verbs like 'be cold', 'be warm', 'be full', 'be hungry', 'be lonely', 'be depressed'. A few verb roots can appear with either a patient or a dative.

(26) KOASATI PATIENTS AND DATIVES — Kimball 1991: 253-4

ca-hó·p	'I am sick'	*am-hó·p*	'I am hurt'
ca-ká·n	'I am well'	*am-ká·n*	'I have an orgasm'

A transitive verb may contain a patient and a dative pronoun, or even two patients.

(27) KOASATI TRANSITIVES — Kimball 1991: 253, 6, 7

a. *ca-yawoplí·c-íska-honk*
1SG.PATIENT-startle-2SG.AGENT-ADV
'You just gave me a nasty fright.'
(on purpose)

cin-ca-yawópka-hónk
2SG.DATIVE-1SG.PATIENT-startle-ADV
'You just gave me a nasty fright.'
(accidentally)

b. *cin-ca-yín-ko-lahǫ*
2SG.DATIVE-1SG.PATIENT-believe-NEG-IRR
'I will not believe you.'

am-ci-palátká?
1SG.DATIVE-2SG.PATIENT-be.cross.w
'Are you cross with me?'

c. *ci-ca-bán*
2SG.PATIENT-1SG.PATIENT-need
'I need you.'

ci-ca-yyí·ho-·s
2SG.PATIENT-1SG.PAT-treasure-PAST
'I don't want to let you go.'

Coreferent independent nominals and pronominal affixes may appear in different cases within a clause, since their case categorizations follow different patterns.

(28) KOASATI CASE COMBINATIONS — Kimball 1991

anó-k *ca-bàn.*
I-NOMINATIVE 1SG.PATIENT-want
'I want some (too).'

anó-k *ą-hó·p.*
I-NOMINATIVE 1SG.DATIVE-be.hurt
'I am hurt!'

An additional categorization may come from 'switch reference' suffixes. Interestingly, the 'same subject' suffix has the same shape as the nominative case suffix.

(29) KOASATI CASE COMBINATIONS AND SWITCH REFERENCE — Kimball 1991

hí·ca-li-·p *in-ca-małátli-hco-k*
see-1SG.AGENT-SUBJUNCTIVE 3SG.DATIVE-1SG.PATIENT-fear-HABITUAL-SAME.SUBJECT
'If I see one, I am afraid of it.'

4.4.3. *Nominative/accusative and direct/inverse combinations*

Direct/inverse systems are less common than the others, but they do appear in combinations as well, as in Kutenai of British Columbia, Idaho, and Montana. The expression of grammatical relations in Kutenai is described in Morgan 1991 and Dryer 1992, 1994. First and second person pronouns follow a nominative/accusative pattern. Subjects are expressed by verbal proclitics and objects by suffixes.

(30) KUTENAI FIRST AND SECOND PERSONS — Dryer 1994: 66-7, Morgan 1991: 274

a. *hu* *cxa-ni.*
1SUBJECT talk-INDICATIVE
'I talked.'

b. *hu* *qa* *ʔupx-ni.*
1SUBJECT NEG know-INDICATIVE
'I just don't know.'

c. *hu* *wu·kat-i*
1SUBJECT see-INDICATIVE
'I saw [him/her/it/them].'

d. *wu·kat-ap-ni.*
see-1SG.OBJECT-INDICATIVE
'[He/she/it/they] saw me.'

In the third person, Kutenai shows a proximate/obviative distinction similar to that in Algonquian languages, described in detail in Dryer 1992. Within a sentence no more than one third person referent may have proximate status. Any others must be obviative. Obviative nouns are marked with a suffix *-s*.

(31) KUTENAI OBVIATION — Dryer 1994: 65

wu·kat-i	*pałkiy-s*	*titqat.*
see-INDICATIVE	woman-OBVIATIVE	man

'The man (PROXIMATE) saw the woman (OBVIATIVE).'

Although Kutenai has no grammatical animate/inanimate distinction, animates are generally chosen over inanimates for proximate status, and humans over non-humans.

As in the Algonquian languages, it is more usual for speakers to take the proximate argument as a point of departure for the sentence, that is, the 'topic of discourse, the person nearest to the speaker's point of view, or the person earlier spoken of and already known' (Dryer 1992: 121). Sentences like that in (31), in which the proximate is the one seeing and the obviative the one seen, are pragmatically and formally unmarked. If the direction is reversed, however, and the action moves from an obviative participant to the proximate, a special inverse marker appears on the verb.

(32) KUTENAI INVERSE — Dryer 1994: 65

wu·kat-aps-i	*pałkiy-s*	*titqat.*
see-INVERSE-INDICATIVE	woman-OBVIATIVE	man

'The woman (OBVIATIVE) saw (INVERSE) the man (PROXIMATE).'

The Algonquian inverse construction is transitive and grammatically obligatory in contexts defined by a person hierarchy. Transitivity is not as clear in Kutenai as in Algonquian, since third persons are not usually expressed overtly in the verb.

(33) KUTENAI PRONOMINAL ELEMENTS — Dryer 1994: 66-7

wu·kat-i.	*wu·kat-aps-i.*
see-INDICATIVE	see-INVERSE-INDICATIVE
'[He/she/they] saw [him/her/it/them].'	'[He/she/it/they]saw[him/her/them]'

Dryer points out, however, that third person arguments in clauses like those above are interpreted anaphorically, not dismissed as unspecified. For unspecified third person agents, a passive is used, as in (34).

(34) KUTENAI PASSIVE — Dryer 1994: 69

hu	*wu·kat-iɬ-in.*	*wu·kat-iɬ-ni.*
1SUBJECT	see-PASSIVE-INDICATIVE	see-PASSIVE-INDICATIVE
'I was seen.'		'He/she/it/they was/were seen.'

The Kutenai construction is more restricted than its Algonquian counterpart, since it appears only in clauses with two third person core arguments. Within this domain, however, there is a clear hierarchy: 3 (PROXIMATE) > 3' (OBVIATIVE).

Sentences occur on occasion with multiple obviatives but no proximate. Either a direct or an inverse construction may be used, as in Algonquian, depending on the relative status within the discourse of the two arguments. The inverse is thus more than a mechanical operation on clauses with particular arrays of proximate and obviative nouns. It conveys pragmatic relations directly on its own.

(35) KUTENAI DOUBLE OBVIATIVE CONSTRUCTIONS — Dryer 1994: 72-3 from Boas 1918: 36

DIRECT	*qak-iɬ-ni*	*k-ł*	*ʔuquxakuł-s*	*wuʔu-s.*
	say-TRANS-INDIC	SUBORD-IRREAL	pour.in-OBV.SUBJECT	water-OBV

'He (PROXIMATE) told it (OBV) that it (OBV) should pour water (OBV) in.'

INVERSE	*qa-e´ɬx$_a$-naps-i´s-ne·*	*k.ławła-s.*
	NEG-bit-INVERSE-OBV.SUBJECT-INDICATIVE	Grizzly-OBV

'Grizzly Bear (OBVIATIVE) had not bitten her (OBVIATIVE).'

4.4.4 *Ergative/absolutive and agent/patient combinations*

A fourth pattern combination, predictable but less widely documented cross-linguistically, occurs in North America as well. This is a combination of ergative/absolutive and agent/patient systems.

In Natchez, a language isolate first encountered in Mississippi, grammatical relations are indicated by case enclitics on noun phrases and by pronominal affixes on verb phrases. Five cases are distinguished on noun phrases: ergative/instrumental, absolutive, comitative, allative, and locative. The ergative/absolutive pattern can be seen in (36). The single core argument of an intransitive clause, like the noun 'opossum' in (a) and (b), is in the unmarked absolutive case. The noun carries only a definite article *=a* (with automatic nasalization before a pause). The patient of a transitive clause appears in the same unmarked absolutive form, as in (c). The agent of a transitive clause, however, carries the ergative case enclitic *=c*, as in (d). Material cited here is drawn from the fieldnotes of Mary Haas (p.c. 1982). The speaker was Watt Sam.

(36) NATCHEZ ERGATIVE/ABSOLUTIVE CASE ON NOUN PHRASES — Watt Sam to Mary Haas

a. *ʔakʷen-uh=aⁿ* *kʷaLsiskuk* *yinka·saL.*
opossum-DIM=the running.away got.far.away
'The opossum (ABSOLUTIVE) ran far away.'

b. *ʔakʷen-uh=aⁿ* *yest-uWa=ʔa·* *sentuksisu·ne.*
opossum-DIM=the grandmother-DIM=COMITATIVE they.two.were.living.there
'The opossum (ABSOLUTIVE) was living with his grandmother.'

c. *ʔakʷen-uh=aⁿ* ya·wi·stek ko·siceNta·no·ne kuNa cohona·ci·saⁿ.
opossum-DIM=the across.river something.kills.him water will.get.dry.from.us
'If something kills the opossum (ABS) across the river, the water will dry up on us.'

d. *ma·kte* *ʔakʷen-uh=c=a* *hoksaL* *cohsaL* [. . .]
then opossum-DIM=ERG=the skinning.it roasting.it
'Then the opossum (ERGATIVE) skinned it (a wolf), roasted it, [and . . .]

Verbs are either inflected directly with pronominal affixes or followed by an inflected auxiliary. The pronominal affixes distinguish first, second, and third persons; singular, dual, and plural number; and agent, patient and dative case. Different forms of the pronouns are used in present, past, and optative verbs.

Agent pronominal prefixes are used for participants in control of actions. The present tense forms of the singular agent prefixes can be seen in the intransitive verb *toy* 'to win' and transitive *cak-* 'stick' with auxiliaries. The prefix *(n)a-* in the left column marks present tense, and the prefix *ka·-* on the right marks remote past.

(37) NATCHEZ AGENTS — Watt Sam to Mary Haas

toy-t-a-wa·ⁿ	'I'm winning'	*ka·-toy-ya-wa·ⁿ*	'I won'
toy-pa-na-wa·ⁿ	'you're winning'	*ka·-toy-p-u·ⁿ*	'you won'
toy-na-wa·ⁿ	'(s/he)'s winning'	*ka·-toy-ʔu·ⁿ*	'(s/he) won'
cak-t-a-la·ⁿ	'I'm sticking him/her'		
cak-pa-na-la·ⁿ	'you're sticking him/her'		
cak-na-la·ⁿ	'(s/he)'s sticking him/her'		

Patient prefixes are used for participants not in control, in intransitives and transitives, and events and states. Intransitive patients are in *cop-* 'to lose (in a contest)', 'forget', 'shiver', 'choke', 'get stuck', 'pull loose', 'be tired of', and 'be full of food'. Agents and patients can be compared in 'win' above and 'lose' and 'stick' below.

(38) NATCHEZ PATIENTS — Watt Sam to Mary Haas

cak-i-ni-la·ⁿ	'(s/he) was sticking me'	*ka·-cop-i-n-u·*	'I lost'
cak-i-pi-la·ⁿ	'(s/he) was sticking you'	*ka·-cop-i-p-u·*	'you lost'
cak-ala·ⁿ	'(s/he) was sticking (him/her)'	*ka·-cop-u·*	'(s/he) lost'
cak-pa-na-hni-la·ⁿ	'you're sticking me'	*cak-t-a-pi-la·ⁿ*	'I'm sticking you'
cak-na-ni-la·ⁿ	'(s/he)'s sticking me'	*cak-na-pi-la·ⁿ*	'(s/he)'s st you'

The distribution of pattern combinations across languages reflects the fact that each is based on the grammaticization of a slightly different distinction.

The distinction underlying agent/patient systems is perhaps the clearest. These systems represent the grammaticization of a contrast in local semantic role, prototypically distinguishing the instigating, controlling, core participant from the non-controlling, affected one. This pattern appears rarely in noun case marking and almost never in clause combining. It is generally confined to pronouns, usually pronominal affixes on verbs as in Koasati and Natchez. This is not surprising, since it reflects the role of the participant in a specific action or state, expressed within the verb. In many languages the distinction is limited to animate participants (those capable of controlling and experiencing), often to humans, as in Central Pomo, and sometimes to just speech-act participants or even first persons, as in Haida.

Several features have been proposed to underlie ergative/absolutive systems. A likely one is that the absolutive, the argument which is typically unmarked and which appears in every clause, represents the participant most immediately involved in the event or state: the person running or sleeping, the stone thrown (Mithun 1994). Ergative/absolutive systems appear most commonly in noun case marking and often in pronominal forms, as in Tsimshianic, Chinookan, Alsea, Eskimoan, and Natchez.

The distinction underlying nominative/accusative systems has been recognized for some time. These systems are based on the category of subject. Subjects represent the grammaticization of a starting point, a point of departure for a clause (Chafe 1994). They are typically semantic agents rather than patients, first or second persons in preference to third, humans rather than inanimate objects, identifiable (definite) rather than unidentifiable, and given rather than new, though none of these is criterial alone. Speakers tend to present situations from their own point of view or that of their audience, or at least that of another human being, with whom they most easily empathize. They tend to move from the established or the known to the new. Once a vantage point is established, they tend to retain it over a stretch of discourse. For this reason, subjects are also described as grammaticized topics. It is not surprising that nominative/accusative systems are most robust in certain areas of the grammar, such as pronouns over nouns as in Alsea (given entities over new), first and second persons over third as in Kutenai, and in clause-combining constructions as in Yup'ik.

4.5 Obliques and applicatives

Languages vary in the degree to which they distinguish core and oblique arguments, that is, participants classified grammatically as central to the discussion and those classified as peripheral or secondary. In English, core arguments are represented by noun phrases alone, while obliques are preceded by prepositions: *[My brother]$_{core}$ lost [his wallet]$_{core}$ [at the beach]$_{oblique}$ [on Sunday]$_{oblique}$*

In many North American languages core arguments are represented by pronominal affixes or clitics on verbs, while obliques are not. Oblique arguments are identified only by independent nominals. Such a situation can be seen in Barbareño Chumash, of the California coast. Subjects are identified by pronominal prefixes on verbs, and objects by pronominal suffixes, with or without additional nominals, as can be seen in (1)a. Obliques are identified only by independent nominals, as in (1)b and c. The hearer is left to infer the exact role of the oblique participant in the situation.

(1) BARBAREÑO CHUMASH NOUN PHRASES — Mary Yee to Harrington 59.660, 700, 467

a. *samqilisiniwewun* — *hištiništin*
s-am-qili-siniwe-wun — *hi=štin-*RDP.*?*
3-INDEFINITE.SUBJECT-PAST.HABITUAL-kill-3PL.OBJECT — DEPENDENT=dog-PL
'They used to kill dogs.'

b. *s-qili-sili-?meči* — *hi=k-sa?-nan* — *hi=he?=l=puwewlu.*
3-HABITUAL-DESIDERATIVE-always — DEP=1-FUT-go — DEP=PROX=ART=town
'I always want to go (to) town.'

c. *ke=s-iqmay-waš* — *hi=ho?=s-teq* — *hi=l=?owow* — *hi=l=maxakiš.*
and=3-cover-PAST — DEP-DIST=3-face — DEP=ART=white — DEP=ART=cloth
'And she covered her face (with) a white cloth.'

Sm'algyax, a Tsimshianic language of the northern British Columbia coast, shows a similar situation except that oblique nominals are identified by a general oblique enclitic attached to the word before them. In (2) the person throwing and the dirt are core arguments, identified by enclitics on the verb 'throw'. The oblique status of the face is identified by the enclitic *=da* that precedes it.

(2) SM'ALGYAX GENERAL OBLIQUE — Mulder 1988: 67

Galiimks=id=a — *yuup=da* — *ta'sl-t.*
throw=3.ERGATIVE=ABSOLUTIVE — dirt=OBLIQUE — face-3.POSSESSIVE
'He threw dirt in her face.'

The roles of oblique arguments are further differentiated in some languages. Central Alaskan Yup'ik shows the familiar pattern of identifying core arguments by pronominal suffixes on verbs, but not obliques. Case roles are also indicated in Yup'ik by suffixes on nouns. Five different oblique cases are distinguished: locative ('at, in, on'), allative ('toward'), ablative ('from'), vialis ('through'), and aequalis ('like').

(3) YUP'IK OBLIQUES — Elizabeth Ali, speaker

a. *elitenaurvigmi* — *uitaunga,*
elite-naur-vig-mi — *uita-u-nga*
learn-habitually-place.for-LOCATIVE — stay-INDICATIVE.INTRANSITIVE-1SG
'I'm at school.

nunamnek — *watua* — *avai,* — *ayallruunga*
nuna-m-nek — *watua* — *avai* — *ayag-llru-u-nga*
land-1SG/3SG-ABLATIVE — right.now — over.there — go-PAST-INDICATIVE.INTRANSITIVE-1SG
I just came from home a little while ago.'

c. *Kuigkun* — *anelrarluni*
kuik-kun — *anelrar-lu-ni*
river-VIALIS — go.downriver-SUBORDINATIVE-3SG
'He went downriver (by way of the river).'

Often ideas that would be represented by oblique noun phrases in European languages are conveyed within the verbs of North American languages, particularly those that are polysynthetic. In the Barbareño sentence in (4), both the instrument/means 'on horseback' and the direction 'to mass' are expressed by verbs (derived from nouns borrowed from Spanish).

(4) BARBAREÑO — Mary Yee to Harrington 59.701

ka=me-s=iy-?akawayu — *hi=s-iy-misál.*
rather=EMPHATIC=3-PL-be.on.horseback — DEPENDENT=3-PL-go.to.mass
'Instead they went to mass on horseback.'

The roles of noun phrases referring to beneficiaries, companions, instruments, locations, and directions are sometimes expressed in another way within verbs, by means of derivational suffixes called 'applicatives'. Applicatives alter the argument structure of verbs, forming stems that include as part of their meanings the role of a core argument as an instrument, location, etc. The suffix *-in* in the Barbareño verb 'salt-with' indicates that the following object noun 'ashes' refers to an instrument.

(5) Barbareño instrumental applicative — Mary Yee to Harrington 59.598

s-iy-su-tip-ʔ-in	*hi=ho=l=ʔalušpawat*	*hi=hoʔ=s-iy-ʔuwu mu*
3-PL-CAUS-salt-TR-INST	DEP=DISTAL=ART=ash	DEP=DISTAL=3-PL-food

'They salted their food with those ashes.'

The suffix *-us* derives verbs whose objects are goals of actions. They may be persons or objects, beneficiaries or locations to which action is directed.

(6) Barbareño dative applicative — Mary Yee to Harrington 59.655

ka=s-am-mon-us	*hi=l=ʔisʔaxpinaš*	*hi=l=ʔ-e-s-sili-xalas*
so=3-INDEF-spread-on	DEP=ART=sore	DEP=ART=NOM-NEG-3-DESID-heal

'So they would smear it on a sore that does not want to heal.'

Applicatives have an important syntactic effect. They create verbs whose core arguments are entities (instruments, locations) that would otherwise be oblique. They are used when those participants are of special importance. Both the cloth in (1)c and the ashes in (5) identify instruments, but in (1)c the cloth was only incidental, never mentioned before or after that sentence. What was important was that the face was covered. The entire discussion surrounding (5) was focused on ashes.

Nez Perce, a Sahaptian language of Idaho, Oregon, and Washington, contains a sizable repertoire of applicatives (Rude 1985). They are used to cast humans or other important entities as core arguments. The effect of the allative applicative can be seen by comparing the sentences in (7). When the destination was the river, it was expressed in an oblique noun phrase with allative case *-x*. When the destination was the uncle, an allative applicative was used to derive a transitive verb 'come to', and the uncle was cast as the direct object. The river was not cast as a central participant in the narrative, but the uncle was. (Rude does not segment the examples.)

(7) Nez Perce allative applicative — Aoki 1979: 9,10 in Rude 1985: 177, 179

a. *kaa* *hitéemikse* *pikúnn-x̣*
and 3SUBJECT-go.down-PROGRESSIVE-SG.SUBJECT river-ALLATIVE
'And she went down to the river.'

b. *piméxpim* *papayn-óó-qana* *'ip-né*
father's.bro-ERG 3TR-arrive-ALLATIVE.APPLICATIVE-HAB-SG.NOM 3SG-ACCUSATIVE
'His paternal uncle used to come to him.'

Applicatives are word-formation devices: they create new vocabulary. The allative applicative appears in the regular Nez Perce transitive verb 'marry' ('go to').

(8) Nez Perce allative — Aoki 1979: 10 in Rude 1985: 178

kúm *'ekiy-úu-yu'.*
INDEFINITE-you 1/2.TRANSITIVE-go-ALLATIVE.APPLICATIVE-IRREALIS
'Perhaps you will marry him.'

There is also an ablative applicative for sources and a comitative for companions.

(9) Nez Perce ablative applicative — Phinney 1934: 41, Aoki 1970: 97 in Rude 1985: 181

a. *hipawpáyxtoqa* *meqséem-kin'ix*
3SUBJECT-PL.SUBJECT-journey-arrive-back-PRF mountain-ABLATIVE
'They arrived back from the mountain.'

b. *kaa* *hi-nas-waka'yk-áapiik-sa*
and 3SUBJECT-PL.OBJECT-fly-ABLATIVE.APPLICATIVE-PROG-SG.SUBJECT
'And she flew away from us.'

(10) Nez Perce comitative applicative — Aoki 1979: 18 in Rude 1985: 180

'eehé	*ká'la*	*wax*	*sooyáapoom*
yes	just	and	whiteman-ERGATIVE

'Yes, and the whitemen are just

hi-nées-wiye-twee-ce *piyex̣cínúilkin'ix*
3SUBJECT-PL.OBJECT-go.along-COMITATIVE.APPLICATIVE-PROG-SG.SUBJECT Mt.Idaho-ABL
going along with us from Mt. Idaho.'

There is another applicative with the meaning 'over'. In (11) it allows the children rather than some horses to be cast as a core argument (direct object).

(11) Nez Perce 'over' applicative — Aoki 1979: 19 in Rude 1985: 182

'éetx *mamáy'as-na* *'apasapóotik-ca-yo'*
you-PL R-child-ACCUSATIVE 1/2.TRANSITIVE-CAUS-step-OVER.APPLICATIVE-IRREALIS
'You will make them step over the children.'

A benefactive applicative allows beneficiaries to be cast as direct objects.

(12) Nez Perce benefactive applicative — Phinney 1934: 381 in Rude 1985: 186

kaa	*qiyáaw'is*	*nacó'x̣*	*hinwíhna-'ni-s*
and	dried	salmon	3SUBJECT-leave-BENEFACTIVE-PERFECT

'and he has left dried salmon for me'

In some cases we can see the historical sources of applicatives. In languages of the Athabaskan family, direction and other kinds of relationships can be indicated by postpositions. The postpositions always follow a pronominal prefix referring to their object, as in the Navajo examples in (13). They may also be accompanied by a noun further identifying the object.

(13) NAVAJO POSTPOSITIONS

a. *Sh-ą́ą́h yílk'aaz*
me-by cold.moved
'I got chilled, caught a cold.'

b. *Shighan bi-ch'į́' yisháá́ł* — Young & Morgan 1980: 81
my.home it-toward I'm.walking
'I'm walking toward home.'

They show meanings similar to those of prepositions and postpositions in many other languages, including 'for, on behalf of', 'to, toward, concerning', 'alongside, beside, on, to the detriment of', 'by', 'to exhaustion', 'waiting for', 'in the way, obstructing, in front of', 'to, toward, in the direction of', 'up, up above', 'with, of, by means of, on, from', 'without', 'into', 'inside, within', 'with, in company with', 'attached to', 'on, upon, on the surface of, above', 'against, colliding', 'behind, following', 'for, in exchange for', 'in conformity with, according to', 'on account of, because of, resulting from', 'aside, against', 'behind', 'during', 'short of', 'between', 'near', 'into its midst', 'over, better than', 'underneath', 'before', 'in front', 'under', 'underneath supporting', 'hidden from', 'inside of', 'up over', 'contrary to', and 'beside, equal to'.

Young, Morgan & Midgette 1992 list 75 postpositions for Navajo. Of those, 37 appear only in constructions like those in (13) above. Some others have begun to develop bonds with the following verb, so that they can now appear as loosely bound verbal prefixes, complete with their pronominal objects, as in (14)b below.

(14) NAVAJO POSTPOSITIONS/VERBAL PREFIXES

a. *Shizhé'é bi-dáá́h níyá.*
my.father him-toward I.went
'I went to meet my father.'

b. *Bi-dáa-shníyá.* — Young & Morgan 1980:89-90
him-toward-he.went
'He went to meet him.'

Their meanings are not always exactly the same in the two positions. The postposition in (14)a *dáá́h* means 'toward (meeting), in front of'. As a verbal prefix, it can have this meaning or also indicate 'blocking' or 'obstructing': *'A'áán dá-di'ní'ą́* 'I closed the burrow (with a rock)' (*'a'áan* = 'burrow').

Young et al. (1992: 922) report that 17 of these markers now occur exclusively as verbal prefixes. Comparison with the more distantly related Eyak indicates that they originated as independent adverbial elements. The evolution of applicatives from postpositions in other languages of the Americas is traced in Craig & Hale 1988.

4.6 Possession

Constructions expressing possession are usually divided into two types: predicative and attributive. In predicative possessive constructions, ownership is usually the main point of the clause, as in *Sam has a dog*. In attributive possessive constructions, ownership is indicated by a modifier within a noun phrase, as in *Sam's dog*.

Predicative possession is often expressed by a verb of ownership meaning 'have', 'own', or 'possess'. The relation it expresses between the possessor and possessed is so general that it is often indicated by an incorporating verb as in (1), by a lexical suffix as in (2), or by no verb at all as in (3).

(1) TUSCARORA PREDICATIVE POSSESSION — Elton Greene, speaker
rutáhskwayę?
ru-tahskw-a-yę?
MASCULINE.PATIENT-domestic.animal-EPENTHETIC-lie.STATIVE
'He has a pet.'

(2) YUP'IK PREDICATIVE POSSESSION — Elizabeth Ali, speaker
tauna levaaq, kassairutellinilria, ayasciiganani.
tauna levaaq kassa-irute-llini-lria ayag-sciigate-na-ni
that motor gas-not.have-apparently-PARTICIP.INTR.3SG go-unable-SUBORD-3SG
'[so] the engine wouldn't start because it didn't have any gas.'

(3) CENTRAL POMO PREDICATIVE POSSESSION — Eileen Oropeza, speaker
ḱú· má·ɬa mu·ɬtayaɬ'
child woman their
'They have a daughter.'

Attributive possessive constructions follow several different patterns. The possessive relationship may be marked within the noun phrase on the noun or pronoun designating the possessor, on that designating the possession, or on both. Maidu, spoken in northern California, shows marking on the term for the possessor. This pattern is sometimes described as **dependent marking** (Nichols 1988) because the modifying possessor noun is grammatically dependent on the modified possessed noun.

(4) MAIDU ATTRIBUTIVE POSSESSION — Shipley 1964: 31, 27

a. *wóleḱi láwani*
wóle-ḱi láwa-ni
whiteman-POSSESSIVE flour-INSTRUMENTAL
'with whiteman's flour'

b.	*Mým*	*kaǩán*	*nìǩí*	*lýkťákym*	*sým*
	my-m	*ka-k-a-n*	*ní-ǩí*	*lýk-ťa-ky*	*sým*
	that-NOM	be-ASP-IND-3	I-POSSESSIVE	crawl-ON-NOMINALIZER	pet

'That's my horse.'

Far more common in North America are constructions in which the possessive relationship is marked on the possessed noun, as in Acoma Keresan of New Mexico. This pattern is sometimes described as **head marking**, since the possessed noun ('hand') is considered the grammatical head of the noun phrase ('the boy's hand').

(5) ACOMA ATTRIBUTIVE POSSESSION — Miller 1965: 148

a.	*ʂúy̨ati*	*kaṁ́ásdí*
	ʂúy̨ati	*g-'ṁ́ásdíi*
	boy	3-hand

'the boy his-hand' = 'the boy's hand'

b.	*ʂaṁ́ásdí*	
	s-'ȧ́másdíi	
	1-hand	

'my hand'

In some languages the relationship is marked on both the possessor and possessed. In Yup'ik, as in the other Eskimoan languages, possessed nouns carry a pronominal suffix specifying both the possessor and the possessed, like *-gka* 'I/them.two' in (6)a. If the possessor is further identified by an independent noun, it carries an ergative case suffix, like 'boy' in (6)b.

(6) YUP'IK ATTRIBUTIVE POSSESSION — George Charles, speaker

a.	*taluyagka*	
	taluyar-gka	
	fishtrap-1SG/3DU	

'my two fishtraps'

b.	*tan'gaurlum*	*taluyai*
	tan'gaurlur-m	*taluyar-i*
	boy-ERGATIVE	fishtrap-3SG/3PL

'the boy's his fishtraps' = 'the boy's fishtraps'

Many languages distinguish two or more kinds of possessive relationships. The most common distinction is **alienability**. In the Siouan languages, possessive relationships are expressed by two sets of possessive prefixes on nouns. The difference can be seen in the examples in (7) from Santee, a Sioux dialect spoken in South Dakota.

(7) SANTEE POSSESSIVE PREFIXES — Martha St. John, speaker

mi-pʰá	'my head'	*mitʰá-čądúpa*	'my pipe'
mi-čʰáǧte	'my heart'	*mitʰá-isą*	'my knife'
mi-íšta	'my eye'	*mitʰá-kʰoka*	'my box'
mi-nápe	'my hand'	*mitʰá-wakšiča*	'my dish'
mi-čʰį́	'my older sister'		
mi-tʰą́	'my younger sister'		
mi-čʰį́kši	'my daughter'		
mi-tʰóžą	'my niece'		
mi-tʰákoža	'my grandchild'		
mi-hų́kawąžį	'my ancestor'		

Possession like that on the left has been termed variously **inalienable, inherent, inseparable, partitive, intimate,** or **relational**. Such entities as body parts and kinsmen are in a sense inherently relational, inseparable from their possessors, not normally acquired or lost. Possession like that on the right has been termed **alienable, separable, transferrable, acquired,** or **accidental**. Items such as pipes and knives are distinct and easily separated from their owners: found, bought, given away, or sold. Specification of inalienability occurs most often cross-linguistically in possessive affixes on possessed nouns, as in (7).

In many languages nouns denoting inalienable possessions cannot be used without specification of their possessors. In the Chumashan languages of central coastal California, possessive pronominal prefixes on nouns have the same forms as subject pronominal prefixes on verbs: Ineseño *k-ičtiṫi* 'my child' and *k-axšiš* 'I call him' (Applegate 1966: 167). A large set of nouns referring to parts of persons, animals, and objects, as well as those for kinsmen, are classified as inalienably possessed and never occur without a possessive prefix (Applegate 1966: 235-46). These include not only body parts (*-noxš* 'nose') but also bodily products (*-molol* 'phlegm', *-oxšol* 'urine'), less tangible extensions of a person (*-aqliẇ* 'voice, word, language', *-ahaš* 'soul, spirit', *-li* 'name'). They also include parts of objects (*-tik* 'tip', *-tipiq* 'base'). All kin terms are inalienably possessed (*-tiǩ* 'mother', *-pepeʔ* 'older sibling'), as are terms for longstanding relationships (*-kalukš* 'clan', *-kiyi* 'master of an animal', *-qoʔ* 'pet, dog', and even *-šik* 'head louse'). Some personal effects are inalienable (*-ʔax* 'bow',

-suwayan 'earring', *-oxmolon* 'personal supply of pespibata or coyote tobacco'). Some abstract relational terms are also classified as inalienable (*-ʔihɨyɨš* 'length, stature', *-xulxulaš* 'weight', *-ʔaqšanɨš* 'death', *-kalaš* 'breath'). Inalienable and alienable possession are shown with the same pronominal prefixes, but the nouns representing inalienable possessions are bound, whereas those for alienable possessions are free.

The possessive prefixes on inalienable nouns show close bonds with their hosts. Applegate (1966: 236) notes that when Harrington documented Ineseño between 1911 and 1919, speakers using native terms in Spanish sentences included the possessive prefixes of inalienable nouns along with Spanish possessive pronouns: *mi ḳunuʔ* 'my ʔunuʔ (grandchild through son)'. The prefixes often remain with the noun in verb-noun compounds, as in *šwišnoxšit* 'he hit me on the nose' (*s-wi-s-noxš-it* 3-hit-3-nose-1 = 'he-hit-one's-nose-me'). A noun beginning with *s* or *š* (a regular phonological alternation), which probably originated as a third person pronoun representing an understood possessor. The initial *s-* of *spil* 'pitch', for example, probably referred to a pine tree: 'its pitch'. The root without the initial *s-* persists in the language in the causative verb *su-pil* 'to smear with pitch' (*su-* = causative). Other terms that probably originated as inalienable possessions include *štumun* 'egg', *sʰap* 'horn', *skuy* 'beak', *sqoqom* 'gravepole', *skukuy* 'cap of acorn', *spuk* 'pinecone', *spuḳuy* 'burned stump', *šliw* 'peel, rind (of fruit)', *swaxom* 'honeycomb', and *sʰol* 'bark'. These forms sometimes occur with additional possessive prefixes, separated by epenthetic *i* and preceded by an article such as *ma-*: *ma-k-i-štumun* 'my egg' (which I have but did not lay), *ma-k-i-sqap* 'my feather'. Alienable nouns may be derived from inalienable stems with a suffix -Vš, sometimes with a shift in sense: *-ahaš* 'soul, spirit', *-ʔahaš-ɨš* 'ghost', *-ičtɨ̀* 'child', *ʔičtɨ̀-ɨš* 'child, doll'.

Many languages resemble Santee and Ineseño Chumash in classifying body parts and kinsmen together as inalienable possessions, though the classification of individual terms varies somewhat. Sometimes only some kinsmen are classified as inalienable, such as those related through blood; others, such as those acquired through marriage, are classified as alienable. If body parts are no longer attached, they are usually classified as alienable, such as a tooth that has fallen out, cut fingernails, or the bone a dog is gnawing on. The part-whole relation linking body parts and their possessors is often extended to parts of inanimate objects, relational terms such as the top of a mountain or the door of a house. As seen in Ineseño, various items within the personal sphere may also be classified as inalienable possessions, such as one's footprints, shadow, name, tribe, clothing, or personal tools such as a bow and arrow.

A general survey of alienability in North America is in Nichols 1988. More detailed descriptions of the systems in Koyukon (Athabaskan) and Mohawk (Iroquoian) are in C. Thompson 1996 and Mithun 1996 respectively.

In some languages kinsmen but not body parts are classified as inalienable. This pattern can be seen in the Maiduan languages of northern California, such as Maidu in (4) above and Konkow in (8) and (9) below. Possessors of kinsmen are marked by pronominal prefixes on the kin terms. Kin terms are morphologically bound, never occurring without a prefix. General alienable possession, by contrast, is marked by a suffix *-ḱi* on the pronoun or noun representing the possessor. Body parts follow the pattern for alienables.

(8) KONKOW INALIENABLE AND ALIENABLE POSSESSION — Ultan 1967: 133, 148

nik-pà	'my father's father'	*níḱi sỳ·*	'my dog'
mín-nè	'your mother'	*mínḱi sỳ·*	'your dog'
mý-ḱùli	'his father'	*mỳḱi sỳ·*	'his dog'

mỳ-ḱi	*té·-ḱi*	*ćíbi·*
3-POSSESSIVE	cub-POSSESSIVE	claw

'her cub's claws'

Some noun stems may be used either as general terms for persons or as kin terms.

(9) KONKOW AMBIGUOUS STEMS — Ultan 1967: 160-1

jépi	'man'	*nik-jèpi*	'my husband'
mínḱi kàti·	'your old lady (wife)'	*mín-kàti·*	'your father's sister'
kónojbè·	'girl'	*mý-kòno*	'his wife'
ḱúli	'widow, widower'	*mìn-ḱúli*	'your father'

A restriction of the inalienable category to kinsmen can also be seen in Takelma, a language isolate of Oregon (Sapir 1922: 231-40).

In other languages inalienable possessions are limited to body parts or part-whole relations. In Tuscarora, as in Acoma, Santee, and Ineseño, attributive possession is specified by pronominal prefixes on possessed nouns. The prefixes for inalienable possessors resemble the grammatical agent prefixes on verbs: *k-táʔreh* 'my head', *k-arenúhaʔ* 'I am running'. The prefixes for alienable possessors resemble those used for grammatical patients on verbs: *ak-hą̀:weh* 'my boat', *wak-taturáʔθeh* 'I'm lazy'.

(10) TUSCARORA POSSESSIVE PREFIXES — Elton Greene, speaker

k-táʔreh	'my head'	*ak-hą̀:weh*	'my boat'
k-káhreh	'my eye'	*ak-hsą̀wáʔreh*	'my needle'
k-hą́hneh	'my ear'	*ak-nąhsawąh*	'my house'
k-túʔθeh	'my tooth'	*ak-ʔwáhreh*	'my meat'

The functional difference between the two constructions is illustrated in (11).

(11) TUSCARORA INALIENABLE AND ALIENABLE POSSESSION — Elton Greene, speaker

k-téhwah	'my skin (on my body)'	*ak-téhweh*	'my hide'
k-kyé?weh	'my hair'	*ak-kyé?weh*	'my broom'

Not all body parts are inalienably possessed in Tuscarora. Blood, for example, is alienable: *akyetkwà:reh* 'my blood'. Perhaps it is not viewed as an inherent or inseparable part of the body, particularly once it is visible. All of the Northern Iroquoian languages share the same basic possessive constructions, but individual items are sometimes classified differently, even when terms are cognate. Terms for detachable parts and for internal organs not usually seen attached are often classified in the other Iroquoian languages as alienable. The Seneca terms for 'hair' and 'liver', for example, are alienable: *aké-ke?æ?* 'my hair' and *aké-thwęhsa?* 'my liver'. The Tuscarora cognates are inalienable: *k-kyé?weh* 'my hair' and *k-athwą́hseh* 'my liver'.

The inalienable category in these languages, unlike that in the Chumashan languages, does not include kinsmen. Some kin terms carry alienable prefixes.

(12) SOME TUSCARORA KIN TERMS — Elton Greene, speaker

ák-hsu:t	'my grandmother'
ak-hrí?ą́h	'my father'
ák-htsi?	'my older sister'
ak-à:ra?	'my brother-in-law'

Other kinsmen are not classified as possessions at all, but rather as participants in relationships expressed by stative verbs.

(13) TUSCARORA KINSHIP RELATIONS IN VERBS — Elton Greene, speaker

yaky-a?nǫ̀:ru?	'we two are friends to each other'	=	'my friend'
yaky-ará?se?	'we two are cousins to each other'	=	'my cousin'
yaky-á:tkǫ:?	'we two are brothers to each other'	=	'my brother'
yakw-á:tkǫ:?	'we all are brothers to each other'	=	'my brothers'
khey-a?nú?nǫ?	'I to him/her am parent'	=	'my son, daughter'
khe-hsą́:teh	'I to him/her am older clanmember'	=	'my nephew, niece'

An even more complex set of distinctions can be seen in Yuchi, a language isolate of Oklahoma. Possession is expressed by pronominal prefixes on nouns, described in Wagner 1933 and Ballard 1975, 1978. The possessive prefixes show the same shapes

as pronominal prefixes on verbs. One set of prefixes is used with inalienable possessions. These match the agent prefixes on intransitive verbs: *di-tó* 'my head', *di-tsché* 'my mother'; *di-stǫ́* 'I swim'. Possessions in this inalienable category include most body parts (face, ear, nose, lips, teeth, gums, shoulder, elbow, arm, wrist, finger, breast, heart, stomach, back, legs, feet, heel), some intimate possessions (*di-wédene* 'my talk', *di-tocíné* 'my hat', *di-tsolé* 'my home', mind, tracks, birthday, dog), most kinsmen (either grandmother, either grandfather or father's sister's husband, parent's sister or mother's brother's daughter, mother, mother's brother or his son, father's sister's husband, spouse or friend, sibling's spouse or spouse's sibling, a woman's sister or her father's brother's daughter or her mother's sister's daughter, a man's brother's son, a man's brother's daughter, son, son's wife, daughter, and daughter's husband).

A second set of prefixes appears only with another set of kinship terms and 'belief'. They match the agent pronouns of transitive verbs: *do-ts'oné* 'my child', *do-hǫ́* 'I take'. The kin terms in this category refer to some relatives of a woman: *do-taoné* 'my brother, father's brother's son, mother's sister's son, *do-wené* 'my sister', *do-ts'onesíę* 'my brother's or sister's child, father's sister's child', *do-djiné* 'my grandchild'.

A third set of possessive prefixes is used with certain items within the personal sphere. They resemble the patient pronouns on verbs: *tse-yadané* 'my name', *tse-có* 'I am tired', *hǫ́-tse-tne* 'he sees me'. Included in this set are one's clan, clan name, shadow or spirit, strength, future, land, body, hair, sinews, one's father and his brother, and certain relatives of a man: *tse-tę́* 'my father', *tse-ę́síę* 'my father's brother', *tse-soné* 'my sister's or my father's sister's children', *tse-thí* 'my wife's parent'.

A fourth set of possessive prefixes is used with a few uncontrolled body parts, some garments, and some other kinsmen. These match the dative pronouns on verbs: *tsio-wi?i* 'my blood', *tsio-cí?á* 'my coat'; *sé-dzio-ci* 'she has pity on me'. Included in this third set of possessions are one's liver, backbone, kidneys, skin, sides, coat, and shirt, and certain relatives of a man: *tsio-toné* 'my brother, father's brother's son, mother's sister's son', *tsio-djiyané* 'my sister's husband', *tsio-djiané* 'my wife's brother'.

A fifth set of possessive prefixes is used with most alienable possessions. These prefixes match the benefactive pronouns on verbs: *tso-b'axté* 'my horse', *ką́láhǫ-tsó-ką* 'he works something for me'. This category includes most objects, such as one's bow, horse, hog, sheep, yarn, necklace, peach, fish, car, book, and some kinsmen: *tso-gohąhane* 'my parents', *tso-gotó* 'my child', *tso-ką́lá* 'my kin', and for a man *tso-watné* 'my sister or father's brother's daughter, mother's sister's daughter'.

The occurrence of some noun stems with alternating prefixes illustrates their differences in function: *di-the* 'my foot', *dzo-the* 'my shoe'; *tse-sę́* 'my bones (in my body)', *tsio-sę́* 'my bones (in a bag)'; *tse-hi* 'my sinews (in my body)', *tsio-hi* 'my sinews (in a bag)'. It is noteworthy that one's dog is classified as an inalienable *di-* possession, while one's horse is considered an alienable *tso-* possession.

The expressive possibilities of the inalienable/alienable distinction have been pointed out by John Dunn. In Sm'algyax or Coast Tsimshian, of northern British Columbia, possessed nouns carry a pronominal suffix identifying the possessor.

(14) Sm'algyax possession — Boas 1911: 392-3

ban	'belly'	*bán-u*	'my belly'
łamkdü	'sister'	*łamkdü-yu*	'my sister'
lax'ó	'place over'	*lax'ó-yu*	'my place over' = 'the place over me'

Body parts, kinsmen, and relative locations are grouped together as inalienable or inherently relational. Inalienable possession is marked by possessive suffixes alone. Alienable possession is marked by the same suffixes plus a prefix *na-*.

(15) Sm'algyax alienable possession — Boas 1911: 393

waalb	'house'	*na-wáalb-u*	'my house'
lab	'stone'	*na-láab-u*	'my stone'

Dunn (1988) has shown that the inalienable/alienable distinction was exploited dynamically over the course of connected speech in traditional Sm'algyax for expressive purposes. Examining a tale told by Eliza Ross (born 1860) and recorded by William Beynon, he discovered that the same items were portrayed sometimes as inalienable (inseparable), sometimes as alienable (distinct). A canoe is normally considered a distinct possession, as in (16)a below, but when people were described crouching down into their canoes to become inconspicuous to their enemies, they became one with the canoe, and the canoe was portrayed as inalienable in (16)b.

(16) Sm'algyax shifting alienability — Beynon ms 4.59:30,5 in Dunn 199

a. *ada* *móxg-ət* *'ásgə* *na-xsóo-s* *łkuháimaas*
and board-he to ALIENABLE-canoe-his.PROPER (name)
'He boarded Lguhaimaas' (ALIENABLE) canoe.'

b. *ada* *łáwəla* *lu-wándət* *'a* *dzəm* *xsóo-t.*
and always down.in-stay to inside canoe-their
'They would always crouch down in their (INALIENABLE) canoe.'

The mouth of a river would normally be considered inalienable, a part of the river, but in (17)b it was classified as alienable, portrayed as distinct from the river the people knew well, as mysterious, invisible, too deep to measure, and dangerous.

(17) Coast Tsimshian shifting alienability — Beynon ms 4.59:19,2 in Dunn 1998

a. *dəm* *wəl* *sa-hón-t* *'a* *süü* *Kxáidzəks*
will where gather-salmon-they at mouth (name)
'where they would gather salmon at the (INALIENABLE) mouth of the Kxaidziks R.'

b. *ada* *aáłga* *'álu-dáł* *na-siyándə* *na-süü* *'áksə gwá'a*
and not out-stand ALIENABLE-bottom ALIENABLE-mouth creek this
'The bottom of the (ALIENABLE) mouth of this creek could not be seen.'

We have now seen examples of predicative constructions in which possession is asserted in a clause, and of attributive constructions in which possession is signaled within a nominal. Some languages also appear to contain attributive constructions expressing possession in clauses, such as Lakhota (Sioux) and Kathlamet (Chinook).

(18) Lakhota attributive possession in clause — Stan Redbird, speaker

pʰehį́ *wéčašla*
pʰehį *wa-ki-ka-šla*
hair 1SG.AGENT-POSSESSIVE-cause.with.instrument-be.bald
'I cut his hair.'

(19) Kathlamet attributive possession in clause — Boas 1901 cited in Hymes 1955: 236

łq̓up	*iciáxux*	*icátuk*
łq̓up	*i-c-í-a-x-ux*	*i-ka-tuk*
cut	IMMEDIATE-MASC.ERG-MASC.ABS-FEM.DAT-POSSESSIVE-do	MASC-FEM.POSS-neck

'He cut her throat.'

Each of these languages also shows attributive possessive constructions in nominals.

(20) Lakhota possession in noun — Stan Redbird, speaker

nipʰáhayapi *kį* *blužážá*
nipʰa-hayapi *kį* *wa-yu-žaža*
your-clothing the 1SG.AGENT-pulling-wash
'I washed your clothes.'

(21) Kathlamet possession in noun — Boas 1901: 115.9

icktú·kuipck	*kánaui*	*táxi*	*tstamqu*
i-ck-tu-kui-pck	*kánaui*	*táxi*	*t-sta-mqu*
IMM-MASC.PL.ERG-PL.ABS-carry-water.to.shore	all	those	PL-DU.POSS-wood

'They carried up all their wood.'

The difference between the clausal and nominal possessive constructions might at first appear to reflect alienability: the clausal constructions are indeed common with inalienable possessions. But in both of these languages, both inalienable and alienable possession can be expressed in both clauses and nominals. The crucial feature is affectedness (Mithun forthcoming c). One who is significantly affected by a situation is represented as a core argument of the clause. The difference can be seen by comparing (22)a and b. One is more likely to be affected by the death of one's horse than by its restlessness.

(22) LAKHOTA AFFECTEDNESS — Boas & Deloria 1941: 88, 12

a. *tʰašų́ke* *kį* *škéhąhą'*
tʰa-šųka-wakʰą *kį* *škehą-hą*
POSSESSIVE-dog-great the prancing-CONTINUATIVE
'His horse is restless.'

b. *šų́kakʰą* *wą* *ki-yé'*
šųka-wakʰą *wą* *ki-ye*
dog-great a POSSESSIVE-die
'His horse died.'

Speakers have choices, expressing affectedness or not.

(23) LAKHOTA CHOICES — Boas & Deloria 1941

a. *mitʰášųke* *kį* *napʰé*
mitʰa-šųke-[wakʰą] *kį* *na-pʰe*
1SG.POSSESSIVE-dog the by.foot-flee
'My horse has run away.'

b. *šų́kakʰą* *'imákiyayapi'*
šųka-wakʰą *i-ma-ki-yaya=pi*
dog-great to-1PATIENT-POSSESSIVE-HAVE.GONE=PL
'My horses have run away.'

A similar distinction can be seen by comparing nominal and clausal possessive constructions in Kathlamet. One might think that one's child would be more inalienable than one's canoe. But the nominal possessive construction was used in (24)a because the person most significantly affected by the washing was the child. The clausal construction was used in (24)b because in turning their canoe around to avoid danger, the two youths in the canoe turned themselves around as well.

(24) KATHLAMET AFFECTEDNESS — Boas 1901: 9.7, 12.1

a. *Aqa* *ikɬúuquat* *ɬkáxan*
aqa *i-k-ɬ-u-quat* *ɬ-ka-xan*
then IMM-FEM.ERG-NEUTER.ABS-apparently-bathe NEUTER-FEM.POSS-child
'Then she washed her child.'

b. *Iskixúlakua* *istáxanim*
i-s-ki-x-l-akua *i-sta-xanim*
IMM-3DU.ERG-MASC.ABS-POSSESSIVE-move-around MASC-3DU.POSS-canoe
'They turned their canoe around.'

The meanings of the constructions are a consequence of their diachronic origins. In the Siouan languages, core arguments are specified by pronominal prefixes on verbs. (Third persons are unmarked.) The prefixes show an agent/patient pattern.

(25) LAKHOTA GRAMMATICAL RELATIONS — Stan Redbird, speaker

GRAMMATICAL AGENTS		GRAMMATICAL PATIENTS	
wa-hí'	'I came'	*ma-hį́xpaya*	'I fell'
a-wá-ʔu	'I brought (him)'	*a-má-ʔu*	'(he) brought me'

If a person is affected indirectly, the indirectness can be marked with the prefix *ki-*:

(26) LAKHOTA DATIVE APPLICATIVE — Stan Redbird, speaker

oyáka '(he) told (it)' *o-má-ki-yaka* '(he) told (it) to me'

It is this marker that implies possession in (18) 'I cut his hair' ('I cut hair indirectly affecting him') and (22)b 'His horse died' ('The horse died indirectly affecting him').

The Kathlamet construction is based on the regular reflexive prefix *x-*: *ikixquat* 'he washed himself' (Boas 1901: 14.5). In constructions like (24)b 'they turned theirs around', the reflexive marks a coreference relation between the ergative agent 'they' and the indirectly affected dative argument: 'they turned it around indirectly affecting themselves'. Possession is not asserted in the verb at all.

Both the Siouan languages and Chinookan languages contain additional clausal constructions for distinguishing kinds of affectedness and for marking the affectedness of a third party. In one of the Siouan constructions, the meaning of another marker derived from the dative *ki-*, which originally specified indirect affectedness, has now been reanalyzed. Its original implication of possession has now become its primary meaning. Verbs containing the marker now mean 'action on another's possession'.

4.7 Clause combining

Probably all languages permit speakers to combine simple sentences (clauses) into larger compound or complex sentences. Compound sentences consist of two or more coordinate clauses: *She lives in town, but her mother still lives in the country*. Complex sentences consist of a main or matrix clause plus one or more grammatically dependent clauses: *I noticed [that he had a beard]*. Languages of North America show some interesting ways in which clause-combining strategies can differ.

The distinction between simple and complex sentences might seem obvious. The analyst simply counts the verbs in a sentence to know how many clauses it contains: since the sentence *When I saw him, I noticed that he had a beard* has three verbs (*saw, noticed, had*), it has three clauses. Verbs are not always so easy to identify in some languages, however. Furthermore, words qualifying as verbs on morphological or semantic grounds might not always function syntactically as predicates (section 2.3). The potential complexity of the issue can be seen by examining connected speech in languages of the Wakashan family of the British Columbia coast. Examples cited here come from the Ahousaht dialect of Nootka, discussed in Nakayama 1997.

Words (or stems) are of two basic types: particles and inflectable words. The vast majority of words in the language fall into the second category. All inflectable words are potentially predicative. Some are usually used syntactically as arguments and refer to entities, such as *čapac* 'canoe' and *qʷayaćiːk* 'wolf'. Some are usually used as predicates, like *hiniːp* 'take' and *naʔa·* 'hear'. Many are frequently used both ways, such as *inikʷ* 'fire/burn'. All, however, can serve as predicates alone without overt derivation ('it is a canoe'). The syntactic functions of words may be specified overtly by markers like the definite *-ʔi·* or the third person indicative *-ʔi·š*, but often there is no inflection. When subjects are specified, first and second persons are identified by pronominal suffixes as in (1)a below, but third persons are unmarked, as in (1)b. Predicates usually appear in initial position in nuclear clauses. They are used for many kinds of information that would seldom be packaged as predicates in other languages, such as '(be) early' and '(be) many' in (1).

(1) AHOUSAHT NOOTKA SENTENCE STRUCTURES — Nakayama 1997: 75-8

a.
huːʔakʔaƛquːs	*mamuːk*
huːʔak-ʼaƛ-quːs	*mamuːk*
early-TELIC-CONDITIONAL.1SG	working

'I would work early.'

b.
ʔaya	*tukuːk*
many	sea lion

'There were many kinds of sea lion.'

When subjects or objects are identified by noun phrases in Nootka, the noun phrases are not marked for syntactic role. Other roles may be specified by words like *ʔukʷink* in (2). Whether (2) is considered a simple or complex sentence depends on whether the last word is analyzed as a predicate 'be with' or a case marker 'with'.

Nakayama 1997: 78

(2) ADDITIONAL GRAMMATICAL ROLES

ʼaːpsʔatu	*qawiqaːɬ*	*tukuːk*	*ʔukʷink*
ʼapsʔatu	*qawiqaːɬ*	*tukuːk*	*ʔu-kʷink*
dive-sink.into.water	[name]	sealion	it-together.with
dive into water	Qawiqaalth	sea lion	be with someone

'Qawiqaalth dove into the sea with the sea lion.'

A similar question arises with adverbials like 'night' (or 'be night') in (3).

Nakayama 1997: 89

(3) ADVERBIAL FUNCTION

ćiːqaːʔaƛquːč	*ʔaːtḥšiƛ*
ćiː-a·-ʼaƛ-quː-č	*ʔatḥ-šiƛ*
sing-CONTINUATIVE-TELIC-CONDITIONAL.3-INFERENTIAL	night-GRADUATIVE
used to sing songs	becoming night

'He used to sing his song at night.'

Nootka shows a characteristic that is not unusual in North America, even in languages with clearer distinctions between predicates and arguments. Particularly in polysynthetic languages clauses tend to show a low proportion of independent noun phrases. What might be expressed in English in a single clause with multiple noun phrases is more commonly expressed in a series of clauses. Each new entity is introduced in a separate clause with a predicate of its own, as in (4).

Nakayama 1997: 120

(4) AHOUSAHT PREDICATES AND ARGUMENTS

suxkʷiƛ	*ʕuẏićakʔi,*
sukʷiƛ	*ʕuẏi-ću-ʔa·k-ʔi·*
take	medicine-inside.container-POSSESSIVE-DEFINITE
take	his medicine bottle

hiːshiƛ	*ʔaḥ*	*ṗatqsacʔisukʔi.*
hist-ʼiƛ	*ʔaḥ*	*ṗatqʷ-sac-ʔis-uk-ʔi·*
there-take	here	goods-receptacle-DIMINUTIVE-POSSESSIVE-DEFINITE
take from	here	his little bag

'He took out his medicine bottle from this little bag of his.'

4.7.1 *The expression of clause linkage*

The languages vary widely in the degree to which links between clauses are formally specified. In the Tuscarora sentence in (5), prosody alone united the clauses into a single compound sentence. Each line began on a lower pitch than did the preceding, with no final fall until the end of the third line.

(5) TUSCARORA COMPOUND SENTENCE — Elton Greene, speaker

Waʔkayǫʔnathą́ːreːt,
waʔ-kayǫʔn-athǫreːt
FACTUAL-3PL/3-carry.off.PRF
they carried him off

kyeníːkǫː	*yuhwèːnuʔ*	*yahwaʔkayǫʔnaʔníʔrǫʔ,*
kyeníːkǫː	*yu-hwen-uʔ*	*yah-waʔ-kayǫʔn-aʔníʔrǫ-ʔ*
this	NEUTER-island-be.in.water	TRANSLOCATIVE-FACTUAL-3PL/3-leave-PRF
this	island	they left him behind there

waʔkayǫʔnaʔníhtrǫːt.
waʔ-kayǫʔn-aʔnihtrǫːt
FACTUAL-3PL/3-tie.PRF
they tied him up
'They took him away and left him on an island, tied up.'

Tuscarora clauses may also be combined into complex sentences with prosody alone.

(6) TUSCARORA COMPLEX SENTENCE — Elton Greene, speaker

ǫkakwèːniʔ	*ǫkayǫtǫhninǫ́hek, . . .*
ǫ-ka-kweni-ʔ	*ǫ-kaye-atǫ-hninǫ-hek*
FUTURE-NEUTER.AGENT-be.possible-PRF	FUTURE-3PL.AGENT-MIDDLE-buy-CONTINUATIVE
it will be possible	they will sell (them)

'It will be possible for them to sell things' = 'They will be able to sell things.'

There are no non-finite verbs in Tuscarora. Every verb can stand alone as a complete, grammatical sentence on its own.

Still, particles are often used to clarify relations among Tuscarora words and clauses. The particle *haʔ*, which functions as a kind of optional definite marker, secondarily identifies words or phrases serving syntactically as arguments or another clause. Particles like *ǫ́ːweh* 'where' and *úːnǫh* 'now, then' identify the locative or temporal roles of embedded clauses, as in (7).

(7) TUSCARORA COMPLEX SENTENCE — Elton Greene, speaker

a. *wahrá:kǫʔ* *ǫ́ːwe* *tihrá:taʔts.*
wa-hra-kǫ-ʔ *ǫ́ːwe* *ti-hra-taʔt-s*
FACTUAL-MASCULINE.AGENT-see-PRF where PARTITIVE-MASCULINE.AGENT-lie-IMPRF
'He saw [where he was lying].'

b. . . . *seʔtsí* *haʔ* *úːnǫ* *ǫʔnwathǫwúhak*
seʔtsi *haʔ* *uːnǫ* *ǫ-ʔn-w-at-hǫw-u-hak*
because the then FUTURE-CISLOCATIVE-NEUTER-MIDDLE-boat-be.in.water-CONT
'(Don't put your elbows out of the canoe), [because when it moves],

nǫθkayǫtkáhnǫhw	*haʔ*	*θúːtar*
n-ǫ-θ-kaye-at-kahnǫ-hw	*haʔ*	*θutar*
CISLOCATIVE-FUT-REPETITIVE-3PL.AGENT-MIDDLE-wake-INCH.PRF	the	soldier

the soldiers will wake up again.'

In other languages syntactic dependency is specified more systematically. In Barbareño Chumash of the California coast, syntactically dependent elements are identified by a proclitic *hi=*. The marker is general in function, indicating simply that the attached element is dependent on a preceding element. The Barbareño material here was recorded from Mary Yee by J.P. Harrington and parsed by Suzanne Wash.

(8) GENERAL DEPENDENCY IN BARBAREÑO — Mary Yee in Harrington 59.660

samqilisiniwewun	*hi=tštiń tiń*
s-am-qili-siniwe-wun	*hi=tštin*-REDUPLICATION
3-INDEFINITE-HABITUAL-kill-3PL.OBJECT	DEPENDENT=dog-RDP
people used to kill them	dogs

hi=l=kashikhikíːwaš	*hi=ĺalaqšán*	*hi=lku*
hi=l=ka=s-hik.RDP*=iwaš*	*hi=l=ʔal-aqšan*	*hi=l=ku*
DEP=ARTICLE=that=3-belong-PAST.NOM	DEP=ARTICLE=NOM-die	DEP=ARTICLE=person
the ones that belong	the ones that die	the person

kayke *ʔalamesilikutiywun*		*hi=siynahnańan.*
kayke *ʔal-am-e-sili-kutiy-wun*		*hi=s-iy-nan*.RDP
because NOMINALIZER-INDEFINITE-NEG-DESIDERATIVE-see-3PL.OBJ		DEP=PL-go
because they did not want to see them		the ones that go

'They used to kill dogs that belonged to a person that died, because they did not want to see the dogs around.'

In many languages dependent clauses are formed by nominalization. The nominalized clauses then function syntactically like other nominals as constituents of higher clauses, identifying subjects, objects, instruments, locations, and more. In languages with case markers, the same case suffixes or clitics that appear with nouns may appear with dependent clauses to identify their precise syntactic roles in the larger sentence. Such constructions can be seen in Lake Miwok, a Utian language formerly spoken south of Clear Lake in Northern California. A nominative case clitic identifies subject complements (9), an accusative case clitic object complements (10), and an instrumental case clitic manners and causes (11).

(9) LAKE MIWOK NOMINATIVE DEPENDENT CLAUSES — Callaghan 1963: 255, 93

ʔic-táwhal *[ma-kóoca* *katúuṭa]=n.*
our-work [those-people killing]=NOMINATIVE
'Killing people is our job.' = 'That's our job, killing people.'

(10) LAKE MIWOK ACCUSATIVE DEPENDENT CLAUSE — Callaghan 1963: 98

kál *[[ma* *jolúum]=u* *menáaw]=u* *ʔéeja* *ṣe.*
then [[he eat]=ACCUSATIVE try]=ACCUSATIVE want again
'Then he wanted [to try [to eat]].'

(11) LAKE MIWOK INSTRUMENTAL DEPENDENT CLAUSE — Callaghan 1963: 117

[hénan *ʔobúu]=ṭu* *nócca.*
[breath bad]=INSTRUMENTAL cry
'Because he feels sorry, he cries.' = 'He feels sorry and cries.'

The allative yields not only 'to where', but also 'when', 'if', 'since', or 'after'.

(12) LAKE MIWOK ALLATIVE WITH CLAUSES — Callaghan 1963: 107-9

a. *[konlemáj ʔinajhintepa]=ṭ* *kénnatajh* *konhíja.*
'They are going to send one man [to where they invite (people)].'

b. *men* *kaʔálu* *[konʔaṭáawaṣi]=to.*
'I just hear (about it) [when they talk].'

c. *[canéc* *kani* *konliláwne]=ṭ* *máa* *kanéenutʔuṭa.*
'[If they had told me more], I would know that.'

The Lake Miwok case enclitics also follow clauses that have been relativized with the marker *=hinte*, to specify the syntactic role of the relative clause.

(13) LAKE MIWOK RELATIVE CLAUSES WITH CASE MARKING

máksaʔak *neʔóṭṭa=n* *[máa* *wilük=u* *ʔéeja=hinte]=n* *hélla* *wilük.*
then two=NOM him catch=ACC want=RELATIVE]=NOM not catch
'Then these two [who wanted to catch him] (NOMINATIVE) did not catch him.'

Some languages have elaborate verbal morphology that marks clauses as dependent and specifies their role in the sentence as a whole. Tonkawa, a language isolate of Texas, has six subordinating suffixes for verbs, a gerundial, and two participials. Some ((14)a-c) are added to verbs inflected for person and number. Others ((14) d-i) are added to uninflected verbs. With these, reference is taken from the main verb. The participial/nominalizer *-k* may be used with case suffixes or modal enclitics (i).

(14) TONKAWA SUBORDINATING SUFFIXES — Hoijer 1931: 94-101

a. *[hegdo·l-ga'ak]* *damo·dak* *djodjomano'o*
'[While singing], shut your eyes tightly.'

b. *[e·la* *necexwc-'ok]* *ma·dan* *wedjxeu*
'[When I shout], turn them loose quickly.'

c. *[wa'anec* *hedew'ax* *wa·na-gwa-nec]* *genecyaxau*
'[As soon as I fall to the side], feed me.'

d. *x'ax'ai'anoklakno'o* *[weyadje-l'ila]*
'He laughed [when he looked at them].'

e. *[cognona-d]* *xadjloklakno'o*
'[Hearing it], she became angry, it is said.'

f. *[necgaban'a·lak* *da'anxaidjona-da]* *hel'eyagxonaklakno'o*
'[He lifted up the door (of a tipi) and] peeped in, it is said.'

g. *[nex'eu'a·lak* *nog-'an]* *'eiwendjaganaklakno'o*
'[Taking the gun], he killed them, it is said.'

h. *hedlo·no'c* *[yaxa-n]*
'I don't want [to eat].'

i. *'awac'a·la* *[yaxdo·xa-k-la]* *hadjxod* *yalxilnaklakno'o*
'Buffalo [having eaten it all (PARTICIPIAL-NOMINATIVE)], he jumped up to run away.'

In the Algonquian languages, verbal paradigms are divided into what are termed **orders**. In principle, **independent order** verbs are used for main clauses and **conjunct order** verbs for dependent clauses. (The languages differ among themselves in the forms and functions of the different orders or conjugation patterns.) Patterns are illustrated here with material from North-West River (Shesha:tshi:t) Montagnais of Labrador, described in Clarke 1982. Independent and conjunct forms can be compared in (15), where the 'if' of the conjunct verbs is expressed by the suffix *-i:*.

(15) NORTH-WEST RIVER MONTAGNAIS ORDERS: *nipa:-* 'sleep' Clarke 1982: 42, 96

INDEPENDENT ORDER		CONJUNCT ORDER	
ni-nipa:-n	'I am asleep'	*nipa:-ia:n-i:*	'if I am asleep'
tshi-nipa:-n	'you are asleep'	*nipa:-in-i:*	'if you are asleep'
nipa:-u	's/he is asleep'	*nipa:-tsh-i:*	'if s/he is asleep'
nipa:-nua	'the other is asleep'	*nipa:-ntsh-i:*	'if the other is asleep'

Both independent and conjunct order verbs can carry further distinctions of tense and mode, often marked by prefixes. In addition, conjunct verbs can show some distinctions not found in independent verbs. The **subjunctive conjunct** is formed with the suffix *-i:* seen in (15) above. It can be used for potentially realizable events: *Nikatu:ten [mekua:t nipa:-in-i:]* 'I'll do it [while you're asleep].' The **changed conjunct** is formed by altering the first syllable of the verb stem (which may be a tense/mode prefix). It can mark an event that is partially or totally realized: *[Mekua:t nepa:-t] nitshi:tu:te* '[While he was asleep] I went out.'

Conjunct forms appear in a variety of dependent clauses, with or without a complementizer ('that', 'who', 'what', 'which', 'whether', 'where', etc.). They appear in complements: *Nitshissenima:u [e-tshi:tu:tet]* 'I know [he is leaving]', *Tshissenimeu [auenua e-tu:tamintshi:]* 'He knows [who is doing it]', *Tshissenitam [e-tu:ta:k]* 'He knows [what he's doing]', *Tshissenitam (nete) e-tu:tet]* 'He knows [where he is going', *Tshissenitam [uet ia:kushit]* 'He knows [why he is sick].' They appear in temporal adverbial clauses: *[Uia:pmak] nipa:pan* '[When I saw him], he was asleep', *Niua:pama: [esk" eka: tshia:tu:tet]* 'I saw him [before he left].' They appear in relative clauses: *(Ne) na:peu [e-tshi:tu:tet] nukumish an* 'The man [who is leaving] is my uncle', *Mi:ni: [e-ui:sha:ua:t] mashineikan* 'Give me a [yellow] book' ('that is yellow').

Conjunct verbs also appear in two kinds of constructions that one might expect to qualify as independent sentences: negatives and question-word questions. Negatives are formed with the particle *apu:* 'not' plus a conjunct verb: *Apu: nipa:ia:n* 'I am not asleep'. Question-word questions are introduced by a question word followed by a conjunct verb: *Tshekua:n e-tu:taman?* 'What are you all doing?'

Certain North American languages show us that the distinction between independent and dependent clauses is not necessarily constant cross-linguistically. A not uncommon historical change is a gradual increase in the use of dependent verb forms in independent sentences. We have just seen negative and question constructions in Montagnais (Algonquian) that are based on conjunct forms. In his description of Miami-Illinois, an Algonquian language originally spoken in what is now Indiana and Illinois, Costa counted the independent and dependent verbs in 18 texts recorded from three speakers early in the twentieth century (1994: 322). Around 95 percent of the non-imperative verbs in the sample were dependent verbs.

A similar preponderance of grammatically dependent verb forms appears in natural speech in Central Alaskan Yup'ik. In Yup'ik, as in other Eskimoan languages, verbal suffixes are used extensively to mark dependent clauses. Among these are *-ller-* 'when (in the past)', *-nginaner-* 'while', *-paileg-* 'before', *-ngr-* 'although, even though, even if', *-aqa-* 'whenever', *-nga-* 'because', *-ku-* 'if, when in the future', and participials *-ke-* /*-lria*. There is also a suffix *-lu-* termed the **subordinative**. It does appear in many contexts in which subordinate clauses would be used in English. The Yup'ik subordinative, however, is considerably more prevalent in connected speech, particularly in narrative, than are subordinate clauses in English. Examples of its use can be seen in the passage from a children's story in (16). (A detailed description of the Yup'ik subordinative is in Miyaoka 1997.)

(16) YUP'IK SUBORDINATIVE Elizabeth Ali, speaker

Tuai-llu-gguq,	*upeqarluki,*	*anluni,*
tuai=llu=gguq	*upete-qar-lu-ki*	*ane-lu-ni*
SO=and=HEARSAY	prepare-before-SUBORDINATIVE-3R/3PL	go.out-SUBORDINATIVE-3SG
and so, they say	having prepared thing	going out

'And so, they say, after she got things ready, she went out,

piyuaqcaarluni-llu-gguq.
piyua-qcaar-lu-ni=llu=gguq
walk-endearingly-SUBORDINATIVE-3SG=and=HEARSAY
walking along endearingly
and she walked.

Ayagluni . . .	*angutet*	*enitnun,*
ayag-lu-ni	*angute-t*	*ene-it-nun*
go-SUBORDINATIVE-3SG	man-ERG.PL	house-3PL/SG-ALLATIVE
going	men's	to their house

She went to the men's house

apa'urluni	*paqcarturluku.*
apa-urluq-ni	*paqete-cartur-lu-ku*
grandfather-dear-3RSG/3SG	visit-go.to-SUBORDINATIVE-3R/3SG
her dear grandfather	going to visit him
to see her grandfather.	

Maaten-gguq-am,	*piyuaqcaarallerani,*
maaten=gguq=am	*piyua-qcaara-ller-ani*
when=HEARSAY=EMPHATIC	walk-minding.own.business-when-3SG
when it seems	while walking along minding her own business
While she was walking,	

Tulukaruk,	*agiirtelria.*
tulukaruk	*agiirte-lria*
raven	approach.from.distance-PARTICIPIAL.INTRANSITIVE.3SG
Raven	approaching from a distance
Raven approached.	

Tauna-llu-gguq	*nasaurluq*	*tua-i,*
tauna=llu=gguq	*nasaurluq*	*tuai*
that=and=HEARSAY	girl	then
and that one, it seems	girl	then
Now it seems that girl		

tangerryuumiinaku	*Tulukaruk.*
tangerr-yuumiite-na-ku	*tulukaruk*
see-not.want-SUBORDINATIVE-3R/3SG	raven
not wanting to see him	Raven
did not want to see that Raven.'	

The English translation of this passage, provided afterward by the speaker, contains five sentences, with five independent clauses. The intonation of the Yup'ik original would suggest a similar structure: the periods in the transcription correspond to final falling tones, often followed by a pause. Yet there is not a single grammatically independent clause in the entire Yup'ik passage. The Yup'ik subordinative construction marks clauses that are linked not necessarily syntactically, but pragmatically, clauses that are presented as constituents of a higher level discourse unit. The passage in (16) relates a sequence of closely related events, elements of a larger episode.

4.7.2 *Switch-reference*

A distinction noted in compound and complex sentences in a number of North American languages is switch-reference. Canonical switch-reference is 'an inflectional category of the verb, which indicates whether or not its subject is identical with the subject of some other verb' (Haiman & Munro 1983: ix). The term was coined by William Jacobsen, who first illustrated the pattern with Washo, an isolate of Nevada (1967). In Washo, two or more coordinate clauses may be linked by simple juxtaposition, as in (17)a and b below. Subordinate clauses are identified by a verbal suffix: *-gi* identifies a subordinate clause serving as the subject of the main clause, *-ge* identifies a subordinate clause serving as a sentential object, and *-da* identifies an adverbial clause. In all of these constructions, if no additional suffix appears on the verb, the subjects of the linked clauses are interpreted as the same, as in (17)a, c, and e. If the suffix *-š* appears, the subject of the marked clause is interpreted as different from that of the main clause, as in (17)b, d, and f.

Jacobsen 1967: 244-8

(17) WASHO SWITCH-REFERENCE

a. *yá·sa?* *dulé?šugi* *yá·sa?* *gedumbéċedáša?i*
again he is reaching towards him again he is going to poke him
'Again he is reaching towards him, again he'll poke him.'

b. *mémluyi-š* *lémeh-i*
you eat-DIFFERENT.SUBJECT I'll drink
'If you eat, I'll drink.'

c. *?lé·biwi-ge* *?i?wa?*
he bit it off-OBJECTIVE.NOMINALIZER he ate it (SAME)
'What he bit off he ate.'

d. *lí·giyé·si-š-ge* *?umYá:mi*
I didn't see him-DIFFERENT.SUBJECT-OBJECTIVE.NOMINALIZER you're talking about (DIFFERENT)
'I didn't see the one you're talking about.'

e. *gebeyé·ċiksá?i-da* *tukdá·šuweti?a?.*
they opened the door ADVERBIAL they looked inside (SAME)
'Opening the door, they looked inside.'

f. *?á·ša?i-š-da,* *?umyá·gali*
she is urinating-DIFFERENT.SUBJECT-ADVERBIAL you go inside (DIFFERENT)
'When she is urinating, you go inside.'

Washo verbs contain pronominal prefixes: the first person *l-*, second person *m-*, and third person *ʔ-* are easily seen in (17)b and c. The different-subject suffix *-š* is not part of the pronominal paradigm. Some languages contain only different-subject markers like Washo; some contain only same-subject markers; and some both. A survey of switch-reference systems appears in Jacobsen 1983.

The possible existence of switch-reference systems in various North American languages has been an active topic of discussion, particularly in languages of the Yuman family (Kendall 1975, Munro 1976, 1980b, 1983b, Winter 1976, Slater 1977, Langdon 1978, Langdon & Munro 1979, Redden 1980, Hardy 1982, Gordon 1983, Ichihashi-Nakayama 1997), the Pomoan family (Jacobsen 1967, McLendon 1975, Oswalt 1977a, 1983, O'Connor 1987, Mithun 1993a), the Muskogean family (Payne 1980, Munro & Gordon 1982, Munro 1983, Kimball 1991, Rising 1992, Davies 1998), Yokutsan (Jacobsen 1983, Gamble 1998), and Maiduan (Oswalt 1976a), as well as for Yuki (Jacobsen 1983), Klamath (Jacobsen 1983), some Uto-Aztecan languages including Comanche (Armagost 1990), Southern Paiute (Sapir 1930: 243-7, Jacobsen 1967), Tübatulabal (Voegelin 1935: 123-7, Jacobsen 1967), O'odham (Langdon & Munro 1979), Hopi (Whorf 1938: 277-80, 1946: 176, Jacobsen 1967, Jeanne & Hale 1989), for the isolate Tonkawa (Jacobsen 1967), for Kiowa of the Kiowa-Tanoan family (Watkins 1976b, 1978c, 1987, 1993), for the isolate Zuni (Bunzel 1938: 488-9, Newman 1958: 110-4, Jacobsen 1967), for the Siouan languages Lakhota (Dahlstrom 1982) and Crow (Gracyzk 1987), and for Central Alaskan Yup'ik (Woodbury 1983). Descriptions of some of these systems are in the sketches in Part II of this volume.

More recent work indicates that a number of constructions previously identified as switch-reference actually distinguish the continuity or discontinuity of events rather than of referents. This finding appears in Graczyk 1987 on Crow, Rising 1992 on Koasati (Muskogean), Mithun 1993 on Central Pomo, Watkins 1993 on Kiowa, and Ichihashi-Nakayama 1997 on Hualapai (Yuman). All of these works are based on the analysis of natural discourse rather than elicited examples. In each, it is shown that while clauses linked by a 'same' marker do tend to show a preponderance of coreferent subjects, and those linked by a 'different' marker show a preponderance of disjoint subjects, there are substantial numbers of cases in which the generalization fails to hold. Actions packaged as constituents a of single larger event do typically share the same subject, but they need not. Similarly, actions with different subjects are typically presented as separate events, but they need not be.

Ichihashi-Nakayama 1997 illustrates the difference between continuity of reference and continuity of eventhood with material from Hualapai, a Yuman language of northwestern Arizona. Contrasts that would at first appear to point to a switch-reference system can be seen in the sentences in (18)a and b, elicited as translations from English. The clauses in (18)a, linked by *-k*, share the same subject, while those in (18)b, linked by *-m*, show different subjects.

(18) HUALAPAI 'SWITCH-REFERENCE' Ichihashi-Nakayama 1997: 23

a. *Rhiánnon-ch* *he'-h* *tuy-k* *ðathgwi:l-k-wi-ny*
Rhiannon-SUBJECT dress-DEM 3/3.take.off-SAME 3/3.wash-SAME-AUX-PAST
'Rhiannon took off the dress and [Rhiannon] washed it.'

b. *Jóhn-a-ch* *Máry* *baeq-m* *mi:-k-i-ny.*
John-EPENTHETIC-SUBJECT Mary 3/3.hit-DIFFERENT 3.cry-SAME-AUX-PAST
'John hit Mary and she [Mary] cried.'

When natural discourse is examined, however, the correlation between the markers and subject coreference is less regular. The subjects of the two clauses in (19), from a text in Winter & Butcher 1976, are different, but the 'same' marker *-k* is used. Their actions were packaged together as elements of a single event.

(19) HUALAPAI DISCOURSE WB 1976 cited in Ichihashi-Nakayama 1977: 25

nyə-wi-k *hayku'* *nyə-hwa:k-ya'*
PRF-do-SAME whiteman his-be.two-DEM
'While he [a thief] did that [robbed the train], a white man, his partner,

wampore *tə-nyu:r-k-wa:m-s'am-ya-k* *akiwi:-θ-m . . .*
train FACT-multicolored-REL-carry-close-DEM-LOC stand-COTEMP-DIFFERENT
stood in the door of the mail-carrier part of the train and . . .'

The opposite situation can be seen in (20). The two clauses have the same subject (the authorities), but the two actions were expressed as distinct with the marker *-m*.

(20) HUALAPAI DISCOURSE WB 1976 in Ichihashi-Nakayama 1977: 25

ha-wim-čə-k *ke-k* *ha-wim-čə-θ-m*
DEM-GO-DISJUNCTIVE-SAME Q-LOC DEM-GO-DISJUNCTIVE-COTEMPORAL-DIFFERENT
'They [the authorities] were going in a certain direction somewhere, when

nyə-v-war-čə-k . . .
PRF-EMPHATIC-fail-DISJUNCT-SAME
they [the authorities] failed [to catch him] . . .'

The authorities had been tracking the thief, which would ordinarily have led to his capture. Their failure contrasted with the expected, normal flow of successive events.

5

Special language

There are rich traditions of special speech styles in North America: forms of speech used to babies, forms used in talking about persons with certain physical or social characteristics, forms attributed to animals and other characters in legends, forms attributed just to men or just to women, special narrative styles, ceremonial language, speech play, and even language without speech: Plains Sign Talk.

5.1 Baby talk, 'abnormal speech', and animal talk

Special forms of language used primarily by adults to young children, called 'baby talk', 'motherese', or 'caretaker speech', have often not been recorded, because they appear only in the presence of babies and pets, sometimes romantic partners, and foreigners. Speakers themselves are often unaware that they know such forms until the appropriate context arises. Baby talk may be distinguished by special intonation, vocabulary, phonological substitution, and/or special morphology, most often reduplication and diminutive forms. Speech to and about babies in Nootka (Wakashan), British Columbia, was collected between 1910 and 1914 by Sapir (1915e, 1929b), and again three-quarters of a century later by Kess & Kess from speakers George and Viola Louie, who had used it with their 13 children. Kess & Kess note that 'the Nootka baby-talk register, like that of many other languages, exhibits a wide range of pitch modulation, the reaching and sustaining of high pitch points, whispering and whispery voice qualities, and vowel lengthening' (1986: 203). The vocabulary, like that of most caretaker speech, is concentrated in the areas of kin terms, bodily functions, activities, warnings, attention-getting devices, and endearments. Some is related to basic vocabulary in the language, but some resembles no other known words.

It is often assumed that baby talk represents a simplified form of speech, appropriate for young children. Nootka provides a potential test case. It has a large phonological inventory, which includes glottalized stops and resonants (such as *p̓*, *m̓*), uvulars (*q*, *χ*) labio-velars and labio-uvulars (*kʷ*, *qʷ*), and pharyngeal and laryngeal stops and fricatives. Morphophonemic alternations are complex. Kess & Kess found that the glottalized resonants and uvulars *q̓*, *q̓ʷ*, *χ*, *χʷ* are lacking in baby talk-forms,

though this absence could reflect their comparative rarity in the standard language. The forms also lack the complex internal morphological structure of many adult words, but a number do show reduplication: *pa·paš* 'eat!' (adult form *haʔuk̓ʷi*), *ma·maš* 'suckle!' (*ʔinmaʔi*), *ma·ma* 'mother' (*ʔumʔi·q*), *ka·kana* 'toy' (*ʔimc̓aqy̓ak*), *kuškulululu* 'kootchy-kootchy-koo'. Sapir had noted that Nootkas speaking to or about children customarily add the diminutive suffix *-ʔis* to verbs and other words, 'even though the word so affected connotes nothing intrinsically diminutive' (1915: 3).

Baby talk in Cocopa, a Yuman language of Arizona, shows similar features. Its consonant inventory is somewhat smaller than that of basic Cocopa, due to extensive consonantal ablaut, that is, the substitution of certain consonants for others (Crawford 1970, 1978a). Most consonant onsets to stressed syllables are replaced by *v*. Consonants in other contexts are frequently fronted: palatals and alveolars are replaced by dentals, and uvulars and labiovelars by velars. *r*, typically learned late by children, may be replaced by *l*. A diminutive prefix *n-* generally appears before the root syllable. Thus motherese *kanvúk* 'baby' corresponds to adult *kʷanʸúk*, motherese *ninvú* 'her eyes' to adult *nʸi·yú*, motherese *inlápm* 'when it hurts' to adult *rápm*.

Another special form of Cocopa has been observed with pets (Langdon 1978a). One speaker felt it most appropriate for cats, another for dogs, cats, and horses, and a third had heard it with chickens. This 'animal talk' is also marked by consonantal ablaut, but of a different type. The lateral palatal spirant *ɬʸ* is introduced into every word, either as an addition or as a replacement for another consonant. Thus for *makáy mwayá·c myu·* 'Where have you been?', the form used to a cat was *makáɬʸ mɬʸá·c mɬʸu·*. Langdon notes that 'when used in animal talk, this already highly marked segment is further modified by having the air stream channeled laterally through only one side of the mouth and this is accompanied by the configuration of the lips associated with "talking from the side of one's mouth"' (1978a: 11).

Other discussions of caretaker language, which show similar features, appear in Chamberlain 1890, 1893a, Frachtenberg 1917 on Quileute (Chimakuan), Titiev 1946 on Hopi (Uto-Aztecan), Gayton & Newton 1940 on Yokuts, Casagrande 1948 on Comanche (Uto-Aztecan), Voegelin & Voegelin 1954 on Hidatsa (Siouan), W. Miller 1965: 112 on Acoma (Keresan), Oswalt 1976b on some Pomoan languages, N. Thompson 1985 on Twana (Salishan), and Egesdal 1992 on Thompson (Salishan).

In his famous 1915 'Abnormal types of Speech in Nootka', Sapir reported that:

> It is possible and often customary in Nootka to imply in speech some physical characteristic of the person addressed or spoken of, partly by means of suffixed elements, partly by means of "consonantal play." Consonantal play consists either in altering certain consonants of a word, in this case sibilants, to other consonants that are phonetically related to them, or in inserting meaningless consonants or consonant clusters in the body of the word. The physical classes indicated by these methods are children, unusually fat or heavy people, unusually

> short adults, those suffering from some defect of the eye, hunchbacks, those that are lame, left-handed persons, and circumcised males. (Sapir 1958 [1915e]: 180-1)

In speaking of or to left-handed people, for example, one adds the diminutive suffix and inserts an otherwise meaningless element *-čx-* after the first syllable of the word. (Symbols are regularized here.) Thus the normal form *yá·ɬ'aƛma^h* 'there he is now' (*ya·ɬ-* 'to be there', *-'aƛ* 'now', *-ma^h* THIRD PERSON PRESENT INDICATIVE) appears as *yá·ɬčx^a'iċaƛma^h* 'There he is now, poor little left-handed chap!' Greedy people are addressed and referred to with forms containing the otherwise meaningless element *-čx-* after the first syllable of the word. Thus *hiníɲ'aƛma^h* 'Now he comes' appears as *hičxníɲ'aƛma^h* 'Now he comes, greedy fellow that he is.' Sapir notes that such forms are regularly used in reference to ravens and especially to the mythological Raven, noted for his gluttony. People who are cross-eyed or squint (but not the blind) are referred to with forms containing the diminutive suffix and all sibilants converted to corresponding laterals (*s* and *š* to *ɬ*, *c* and *č* to *ƛ*, *ċ* and *čˇ* to *ƛˇ*). Thus *čˇičiƛma^h* 'he cuts' is rendered *ƛiƛiƛiɬma^h* (*čˇ-* 'to cut', *-čiƛ-* INCEPTIVE). Sapir adds that 'such people, particularly when adult, are apt to become offended if addressed in this fashion, and that one would not use such forms in their presence unless with the express purpose of showing contempt or of teasing' (1958 [1915e]: 182).

Quileute, a neighboring language of the Chimakuan family, shows similar practices (Frachtenberg 1917). Addressing a cross-eyed person, speakers prefix *ƛ-* to each word; for a funny person, they prefix *čk-*; for a small-sized man, they prefix *s-*; talking of a hunchback they prefix *ċ-*; and talking of a lame person, they prefix *čx-*.

Storytellers often adopt special voice qualities when quoting legendary characters. In a number of languages of the Northwest, some characters are given distinctive stylized speech. Sapir reports that the Nootka culture hero *Kwátiya·t* typically inserts *x̣* after the first vowel of a word: *hi·nuse'ɬ^h* 'come up out of the water' becomes *hi·x̣nusa'ɬ̂^{h}*. Raven inserts *-čx-* into words. Deer and Mink replace all sibilants with laterals (as one does for persons with defects of the eye). Thus for *čimis* 'black bear' Deer says *ƛimiɬ*; for *čˇapac* 'canoe' he says *ƛˇapaƛ* . Other Wakashan languages show similar patterns. In Kwakwala to the north, Mink speaks with the reverse consonant substitution: he shifts all laterals to corresponding sibilants (*ɬ*, *ƛ*, *ʎ*, *ƛˇ* to *s*, *c*, *dz*, *ċ*). In addition, he shifts prevelars to sibilants (*x̲*, *k̲*, *g̲*, *k̲ˇ* to *s*, *c*, *dz*, *ċ*). Sapir points out that Mink's Kwakwala shifts resemble actual historical shifts that took place in Nootka, so that Mink's forms are often similar to the regular Nootka forms. Kwakwala *nəgé* 'mountain' appears in Mink's speech as *nədzé*, for example, and in regular Nootka as *nučˇ*. In Nitinaht to the south, Raven inserts *-x̣̌-* (Hess 1982: 96), and in Makah he substitutes *š* for *x̣* and nasalizes vowels (Egesdal 1992: 31).

Neighboring languages from other families show similar patterns. In Quileute,

mythological beings and animals also have distinctive speech (Frachtenberg 1917). The culture hero *Q'éti·* (whose name resembles that of his Nootka counterpart) prefixes *sx-* to every word; Raven prefixes *š-*; Raven's wife prefixes *c-* and shifts *d* and *l* to *n*, and *b* to *m*. For *hétkuli* 'I am sick' she says *c-hetkuni*, and for *bó·yukwa'ċo·^{h}* 'something' she says *c-mó·yu·kwa·'ċo·'*. Deer prefixes *ƛk-* to every word and shifts all sibilants to laterals. In Lushootseed, a Coast Salishan language, Raven replaces *b* and *d* with corrresponding nasals *m* and *n* (Hess 1982). The pattern reverses a sound shift in Lushootseed whereby original nasals were replaced by the voiced stops.

In Nez Perce, a Sahaptian language of Idaho, mythic figures also have distinct forms of speech. Phinney notes that 'Fox speaks with utmost clarity and directness. Bear slurs consonants into *ɬ*. Skunk nasalizes in a high-pitched voice and changes *x̣* to *x* and *k*, *s* to *ts*, *a* to *á*.' (1934: ix). Phinney points out that the special speech forms are not automatic, but expressive: 'Skunk's speech assumes these peculiarities in accordance with the emotional fluctuations of the tale and in accordance with the poignancy and adaptability of a word' (1934: 228 cited in Egesdal 1992: 35).

Egesdal 1992 describes stylized characters' speech in Thompson, an Interior Salishan language of British Columbia. The speech of some bird characters is superimposed on the rhythm, pitch, and vowel quality perceived in their songs. Rat is known to have affected speech, but different storytellers render it in different ways, some with lengthening of stressed vowels, some with lengthening of word-final consonants. Coyote, the trickster character, uses the most vulgar language whenever possible and adds a pejorative suffix *-ólk̲ˇ* to his words when he speaks Thompson. (The gloss ST below stands for 'stigmatized', and PRCP for PERCEPTUAL.)

Egesdal 1992: 29

(1) THOMPSON SALISH COYOTE SPEECH

ʔóo,	*ʔəpx̣-ólk̲ˇ*	*nukʷ,*	*ʔəpx̣-ólk̲ˇ*	*nukʷ*	*ɬ*	*nqʷiċtm-ólk̲ˇ-kt*
oh	choke-ST	PRCP	choke-ST	PRCP	EST.PAST	spouse.of.dec.sib-ST-1PL

'Oh, it appears she's choking -- it appears she's choking, our in-law.'

Coyote's use of inappropriate vocabulary, distorted or nonsense speech, and special forms appears all over the West (Egesdal 1992: 32). He shifts *s* to *š* in the Interior Salishan language Coeur d'Alene (Reichard 1938: 545), *s* to *š* and *n* to *l* in Nez Perce (Aoki 1970: 190), *s* to *x̣* in Kutenai (Boas 1918: 55), infixes *l^y* in Cocopa and Yuma (Yuman), and suffixes *-pai* in the Uto-Aztecan language Shoshone and *-ayak^y* in Chemehuevi (Langdon 1978a: 11-15).

Sapir reported that in Takelma, a language isolate of Oregon, the prefix *s-* typically occurs in the speech of Coyote and *ɬ-* in the speech of Grizzly Bear (1922: 8). Examining the available body of Takelma texts, Hymes (1979) found that neither prefix occurs with every word uttered by these characters. The prefixes serve an

expressive function, signaling characteristics typically associated with them. The prefix *s·-* indicates 'condescension with sympathy, even affection on the part of the audience and closeness between actors' (1979: 105). The prefix *ɬ-* 'signals something amusing as well as some quality of denseness or pretense', 'condescension, deprecation, disdain for coarseness and stupidity', and 'distance between actors'. Thus 'when Grizzly Bear Woman uses the *s·-* prefix, she is a mother seeking her children. When she uses the *ɬ-* prefix, she is a successful murderess returning home, someone conscious of having been deceived, someone conscious of having eaten parts of her own children, someone bent on murdering again' (1979: 103-5). Hymes traces the *s·-* prefix to an imitation of the speech of the neighboring Siuslaw and Lower Umpqua, characterized by the prevalence of a third person particle *sʔə*. He concludes that the Takelma may have used the prefix to simulate (mockingly) the speech of foreign neighbors.

An interesting phenomenon that mirrors the multilingualism of many groups in the West is the frequent use of foreign speech by characters in legends, as detailed in Egesdal 1992. In Upper Thompson narratives Coyote always speaks Shuswap, and in Lower Thompson narratives Copper Woman always speaks Halkomelem. In Saanich narratives Robin always speaks Klallam, and in Coeur d'Alene narratives Turtle speaks Spokane (all Salishan languages). Some characters use foreign speech more sporadically. Raven speaks Quinault in a Quileute narrative (Andrade 1931: 31), and Coyote uses Colville in a Coeur d'Alene story. In the Keresan texts published by Boas (1928), certain characters use Zuni, Navajo, and Hopi. In the Nass River Tsimshian texts characters use Coast Tsimshian and Gitksan (Boas 1902). In Haida texts characters speak and sing Tsimshian and Tlingit (Swanton 1905), and in Clackamas Chinook texts characters speak Molale and Kalapuya (Jacobs 1959a). In Alsea narratives Yakwina and Siuslaw are used by certain characters (Frachtenberg 1920), in a Wishram text it is Shoshonean (Sapir 1909a), in Zuni it is Keresan (Bunzel 1933), in Coeur d'Alene texts it is Nez Perce and Kalispel (Reichard 1947: 30), in Twana texts it is Upper Chehalis and Lushootseed (Elmendorf 1961). The quality of the foreign speech varies from accurate to approximate to simply imitated.

5.2 'Men's' and 'women's' language

There are stereotypes in most cultures about differences between the speech of men and women. Often the differences are subtle, usually a few vocabulary items, perhaps intonation patterns, and certain qualities of articulation. Several North American languages are known for more robust distinctions. Closer examination of connected speech in these languages has sometimes revealed that the situation may be more complex, and that the functions of the forms are not always simply to mark sex.

An early observation of a phonological difference between the Inuktitut speech of men and women on Baffin Island was made by Boas.

> Among some Eskimo tribes the men pronounce the terminal *p*, *t*, *k*, and *q* distinctly, while the women always transform these sounds into *m*, *n*, *ñ*, and *ŋ̃*. In some dialects the men have also adopted this manner of pronouncing, so that the pronunciation has become uniform again. (Boas 1911a: 79)

Nearly 70 years later Kalmár found the difference less categorical.

> Boas' comment that the nasalized form is characteristic of women and children no longer applies. I heard men and women, as well as children, use both nasalized and unnasalized variants. In fact, Boas' field notes reveal that even in his time there was some variation. Among instances where men used nasalized forms is *aqbiktun* instead of *aqbiktut* 'like a berry', said by an informant previously identified as a man (Pakkaq). However, such examples are rare. As for women, I have not discovered any instance in Boas' papers where they use a non-nasalized form. Clearly what happened is that the frequency of nasalized forms has become higher among the men, while non-nasalized variants have increased among the women. This may have been due to contact with speakers of dialects where the usage permitted variable nasalization to both sexes. (Kalmár 1979: 15-6)

Men's and women's registers have also been described in Gros Ventre (Atsina), an Algonquian language of Montana. Flannery 1946 and Taylor 1982 report that both *č* and *ty* in men's speech correspond to *k* or *ky* in women's speech (*ky* before low vowels and *k* before high vowels or finally). Thus where men say *icénibič* 'his gun', women say *ikénibik*. Comparison with earlier wordlists indicates that the men's register developed sometime after 1855, perhaps under influence from the neighboring Arapaho, which it resembles. In the *č* to *k/ky* correspondence the women's form is actually more archaic (from Proto-Algonquian **p*), but in the *ty* to *k/ky* correspondence the men's form is older (from Proto-Algonquian **t*). The men's *ty* was being replaced in the speech of younger males by women's forms. Taylor remarked that several good male speakers persisted in using female forms when working with him, and he eventually learned that they were trying to make things easier for him. He concluded that their assessment may have been due to the fact that female forms are the first ones to be learned by children from their mothers.

In work with Yana, a language of northern California, Sapir noticed systematic differences between the speech of men and women (1929b). The differences are both phonological and grammatical. Phonologically, forms used by men are longer than those used by women. In polysyllabic nouns and many verbs ending in a short vowel, women devoice the final syllable. Thus where men say *i·si* 'man', women say *i·sị*; where men say *imamba* 'deer liver', women say *imamp^{h}ą*. In other nouns, verbs, and demonstratives, men's forms show an added syllable, often *-na*. Thus where men say *'i-na* 'tree, stick', women say *'i^{h}*; where men say *ya·-na* 'person' women say *ya·^{h}*. In some constructions, men and women simply use different morphemes. To form a

basic question, men add an enclitic *=n* plus stress and falling tone to the preceding vowel: *'au'asì=n* 'Is there fire?'. Women add the same stress and tone, but lengthen the final vowel: *'au'asì=·*. More emphatic questions are formed with an enclitic, *=nà* for men and *=gà:* for women. Thus for 'Are you making a noise?', the men's form is *ćewal'asi'nuga=nà·*, while the women's is *ćewal'asi'nuk^h=gà·*.

Though the two registers have been described as men's and women's language, their patterns of usage are somewhat more complex. Sapir explains that the men's forms were used only by men speaking to men. The women's forms were used by men speaking to women as well as by women speaking to anyone. Women apparently knew the men's forms, because they easily switched to them when quoting men's speech. Working with Sapir's fieldnotes, Luthin discovered that the registers were not purely an indication of sex, but rather of formality (1991). The men's forms were more formal or reserved. The reserved register was used not only between men, but also for formal public speaking, regardless of the composition of the audience, and by men speaking to their mothers-in-law.

Systematic phonological differences between the speech of men and women were also noted in Koasati, a Muskogean language of Louisiana, by Haas (1944). Haas found that the differences were most easily described by taking the women's forms as basic. The women's forms can also be seen in some cases to be more archaic. Men's forms generally show an added *-s*: women's *lakáw*, men's *lakáws* 'he's lifting it'. When Haas last worked with the language in 1939, both men and women knew the forms used by the other and could produce them easily when quoting speakers of the opposite sex. But only middle-aged and elderly women used the women's forms, while younger women used the men's forms. In work beginning in 1977, however, Kimball found an almost complete absence of the male forms identified by Haas. He analyzes the marker in question as a phrase-final enclitic *=š* marking authority. It occurred in the speech of both men and women, including that of Selin Langley, recorded by Swanton in 1910. Mrs Langley was the mother of Haas' principal consultant Jackson Langley. Kimball's consultants remembered its use by only a few earlier speakers, the youngest born in 1886. All were recognized as respected, socially prominent persons. The question of men's and women's speech in Koasati is further discussed in Kimball 1987, 1990, and Saville-Troike 1988.

Perhaps the best known examples of men's and women's styles come from languages of the Siouan family of the Plains. The languages show few distinctive markers, but they are pervasive. The system is not uniform across all of the languages in the family. Descriptions of Lakhota in Buechel 1939, Boas & Deloria 1941, Rood & Taylor 1996, and others have all distinguished illocutionary enclitics that vary with the sex of the speaker. Use of the Lakhota markers has recently been studied in detail by Trechter (1995). The enclitics are in (2).

(2) LAKHOTA ILLOCUTIONARY ENCLITICS — Trechter p.c. 1983

	MALE	FEMALE
QUESTION	*hų́wo*	*hų́we* (obsolete)
COMMAND	*yo*	*ye*
FAMILIAR COMMAND	*yet^{h}o*	*nit^{h}o*
OPINION/EMPHASIS/FACT	*yelo*	*yele* (obsolescent), *ye*
EMPHATIC STATEMENT	*kšt*	*kšto*
ENTREATY	*ye*	*na*
SURPRISE/OPINION	*yewą*	*yemą*

Describing the *yelo* and *yele* forms, Boas & Deloria report:

> The use of these forms by men and women is somewhat distinct. *yelo* is used for any declarative statement intended to interest the hearer or as a remark not addressed to any particular person. It always implies a personal opinion of the speaker. When used to close a sentence expressing a well-known fact or one previously not known to the hearer it can be applied only by persons of authority . . . Women, in addressing particular persons, are not expected to express an opinion. For this reason they do not use *le,* but merely the accented *yé.* (Boas & Deloria 1941: 110)

Trechter concurs that the use of *yelo* by males implies a kind of authority to state an opinion or fact as the man sees it, especially in drawing a conclusion. Not all males have the authority in the society to do this. A drunk or derelict would be laughed at if he used this form. She shows that the use of the forms does not always follow a strict sexual division. Other factors at play can include the social position of the speaker, his or her supposed sexual preference, and the relative age of the addressee.

Men may avoid male forms out of deference. 'A 50-year-old man avoided any use of male *yelo* opinion particles at all . . . even when he was clearly giving opinions of things that personally affected him. His father was surreptitiously listening the entire time he spoke so he very probably did not commit himself in deference to this father or fear of being overtly challenged.' (Trechter p.c. 1983)

A woman's use of male forms can be taken as a sign of masculinity, and a man's overuse of female forms as a sign of effeminacy. 'Another female speaker who used the male clitics regularly was considered by some to be gay, referred to as a "tomboy" by one speaker, and as a "dyke" or "that woman with balls" by another. The two women who used the male clitics shared several qualities beyond their speech. They both grew up with a number of brothers and few or no sisters, their biological mothers died when they were young, and they both were in positions of public authority: one was a judge, the other a police officer.' (Trechter p.c. 1983)

Men may use the female clitics to a young child with whom they share an

emotional tie. Trechter cites the example of a man to his two-year-old nephew. (The initial glide of *yele* is backed to *w* following a back vowel.)

(3) LAKHOTA MALE USE OF FEMALE CLITIC — Trechter p.c. 1983

Wąlewą	*hiyu*	*welê:*
INTERJECTION	he came	FEMININE CLITIC

'Look who's come!'

Mandan, a Siouan language spoken in Montana, shows grammatical distinctions based on the sex of the addressee (Hollow 1970a: 456). Addressees classified as masculine include men, male animals, mixed groups, tobacco plants, rocks, and the Deity. Those classified as feminine include women, female animals, and all other plants. The indicative suffix *-o?s* is used in addressing men and others in the masculine category, and the indicative *-o?re* is used to feminines. Questions addressed to men are marked by *-o?ša*, and those addressed to women by *-o?rą*.

(4) MANDAN ILLOCUTIONARY SUFFIXES — Hollow 1970a: 457

a. *rųsúkto?š*
rų-súk-kt-o?š
1INCL-exit-POTENTIAL-MASC.INDICATIVE
'we might go out.' (said to man)

b. *wakirąrąšo?re*
wa-kirąr-raš-o?re
1AGT-tell-TYPIFIER-FEM.INDICATIVE
'I'm kind of telling it.' (to woman)

c. *rįšį?ša*
rį-ší-o?ša
2AGT-be.well-MASC.INTERROGATIVE
'Are you well?' (asked of man)

d. *tké?rą*
tke-o?rą
scrape-FEM.INTERROGATIVE
'Did she scrape it?' (to woman)

Imperatives addressed to men and other masculines are marked by *-ta*: *hį́-ta* 'Drink it!' Imperatives addressed to women are marked by *-rą*: *kšą́t-rą* 'watch out!'

In Biloxi, a southeastern Siouan language, choice of modal enclitics depends on both the speaker and addressee (Einaudi 1976: 78-96). Some enclitics are used only by speakers of one sex or the other, and some are also appropriate only to hearers of one sex or the other. The declarative *=na* is used by male speakers and *=ni* by female speakers. (The declaratives need not be present in every sentence.) Questions are marked with the interrogative *=wo* by men but with intonation alone by women. A hortative *=hi* is used in combination with the declaratives *=na* and *=ni*. Imperatives may be formally unmarked or they may be marked by one of a large set of forms that reflect the sex of both the speaker and the addressee: *=ta* is used by a male to a male, *=di* by a male to a female, and *=te* by a female to a male.

5.3 Narrative and ceremonial language

Most languages contain a range of styles or registers appropriate for different functions and contexts. Special formal styles may be characterized by intonation, vocabulary, grammatical forms, formulaic expressions, and textual structure. The degrees to which they are developed and differentiated vary from culture to culture and speaker to speaker. Not all speakers of a language may be able to produce the formal registers, but most can usually recognize them. Examples of highly-developed formal styles abound in North America. Helpful overviews of the study of these special registers are in Kinkade & Mattina 1996 and W. Miller 1996a.

The term 'narrative' is used to encompass many kinds of performance events, including anecdotes, historical accounts, tales, legends, myths, ritual texts, and more. Fortunately the documentation of North American languages has been characterized by a strong tradition of text collection, particularly since the late nineteenth century with the establishment of the Bureau of American Ethnology in 1879 and the work of Boas throughout the first half of the twentieth century in training students. Texts have been valued for both their cultural and linguistic content, as a window to world view and as a foundation for grammatical description. Until the mid-twentieth century monologic texts were the only forms of connected speech that could be documented, due to the lack of sound recording technology. While a speaker might be prevailed upon to dictate a story or speech slowly enough for it to be written down longhand, it is nearly impossible to document natural conversation with this method.

The content of narrative texts has been of interest to scholars and others from the beginning, and there is a large body of literature on this topic. Melville Jacobs, who collected texts from languages throughout Oregon, drew up a list of content features for comparison across cultures: tale types, plots, and motifs; social relationships; actor personalities; humor; cosmology and world view; religion; value ideals; and songs within texts (Jacobs 1959b, 1964, discussed at length in Kinkade & Mattina 1996). Common tale types include, for example, creation myths and flood stories. A recurring motif involves one animal after another diving into deep water in quest of soil to create the world. A prominent relationship in many narratives is that between grandparent and grandchild, probably reflective of the important role of grandparents in raising grandchildren and passing on cultural knowledge. Many North American cultures have cycles of stories centered around a culture hero or trickster, often Coyote, Raven, Rabbit, or Iktomi. (Some Coyote stories appear in the collections edited by Bright (1978) and Kendall (1980).) Like the animal known today, the legendary Coyote is wily and a wanderer, but he is also greedy, lecherous, and deceitful. He usually survives in the end but suffers as a result of his own outrageous behavior. Humor is pervasive, particularly in trickster stories, but the same stories also carry messages about inappropriate behavior and its consequences. The highly

The highly structured nature of narrative has come to be increasingly appreciated during the twentieth century. Along with his cultural features, Jacobs also drew up lists of stylistic features for the analysis of narratives: recitalist-audience behavior; beginnings, pauses, continuations, and endings; pattern numbers; location expressions; time expressions; explanatory devices; plot devices (motifs); structuring of act, scene, or episode sequences; headings, titles, and manner of ready reference; descriptive inclusions and omissions; items of psychological commentary; speed of action; and vocal technique and mannerisms, repetition, rhythm, and intensity (1959, 1964: 332-3 cited in Kinkade & Mattina 1996: 269). Jacobs' model stimulated much work with narrative, including the development of analytic procedures for uncovering narrative structure from the close examination of formal grammatical and prosodic patterns.

Working with Boas' transcriptions of narrative texts from Chinookan languages of the Northwest, Dell Hymes found hierarchical structural patterns that had not been apparent in the original printed paragraph format (1976, 1977, 1980a, 1981, 1983a). He segmented narrative text into stanzas, stanzas into verses, and verses into lines, on the basis of recurring discourse particles (such as 'and then'), syntactic structure (such as predicates), parallel patterning in form and/or content, and repetition. Higher-level units, termed scenes and acts, could be identified as well on the basis of such features as continuity of setting or participants.

Jacobs had pointed out the recurrence of pattern numbers in narrative. Where events tend to occur in threes in European folktales, they may occur in fours or even fives in many North American groups. Hymes found that the pattern numbers of a culture are often echoed in narrative structure. In Chinookan narratives he discovered recurring patterns of fives and threes. Stanzas often consist of five verses. Events are often expressed with a tripartite rhetorical structure detailing Onset - Ongoing - Outcome (1976, 1977). Coyote stories, for example, often open with a statement to the effect that 'Coyote was going along . . .', typically rendered in Chinookan as a sequence of 'go, go along, get there'. Patterns of fives and threes have been observed in other narrative traditions as well, such as the neighboring Sahaptin (V. Hymes 1987) and Central Alaskan Yup'ik (Woodbury 1987). More pervasive are patterns of fours and twos, as in Tonkawa (Hymes 1987a).

At the same time the availability of audio recordings has made possible closer examination of the prosodic structure of narrative performances. In his analysis of Zuni narrative Dennis Tedlock segmented material into lines bounded by pauses (1972, 1983), also noting the importance of other prosodic features that may be lost in traditional transcription such as rhetorical lengthening, speed, pitch, volume, and special voice quality. More recently those transcribing and analyzing narrative (and other connected speech) have tended to take into account more prosodic features in their presentation and analysis of the material. Lines are identified by a unified

intonation contour, usually marked by an overall descent in pitch, volume, and speed. Cues to their interrelationships are identified in such features as a final pitch contour (partial or full fall), pause, and pitch reset on the following line.

It is now generally agreed that all of these structural, grammatical, and prosodic features can contribute to the shaping of narrative structure. As Anthony Woodbury has pointed out (1983, 1985, 1987), it is important to consider not just the features themselves but also their interaction. 'Rhetorical structure involves autonomous components that segment the stream of speech simultaneously into different kinds of units according to different kinds of criteria. The ways in which units in those components can align, or do align, constitute their interaction.' (1987: 179) Often cues like adverbial particles and prosody coincide to indicate the same structure, such as the cohesion of lines within a verse or the shift to a new scene. In this case the cues serve to reinforce each other. Sometimes they indicate alternative structures, but the conflict itself may have special functions.

An illustration of the kinds of grammatical and prosodic cues that mark narrative structure can be seen in an analysis by Virginia Hymes of a Raven myth from Warm Springs Sahaptin (1987). The narrator was Hazel Suppah. Hymes identifies seven kinds of formal cues to the narrative structure: person marking in the clause; morphological complexity in the verb; shifts in aspect, tense, and direction; use of particles; rhetorical lengthening of vowels; and intonation and voice quality.

Core arguments are specified in Sahaptin by pronominal enclitics on the first word of a clause, often a particle. Only first and second persons are indicated by enclitics: *=naš* 1SG, *=nam* 2SG, *=nataš* 1PL.EXCLUSIVE, *=na* 1PL.INCLUSIVE, *=pam* 2PL. If the enclitic represents the only core argument of an intransitive clause, there is no prefix on the verb, as in (5)a. If the enclitic represents the subject of a transitive clause, the object is indicated by an object prefix on the verb, as in (5)b, c. If it represents the object of a transitive, the subject is marked by a subject prefix on the verb, as in (5)d.

(5) SAHAPTIN CORE ARGUMENTS

V. Hymes 1987: 73

a. *áu=nam q̓inú-ta*
now=you see-will
'Now you will see.'

b. *áu=nam á-q̓inú-ta*
now=you him-see-will
'Now you will see him.'

c. *míš=nam pá-q̓inú-na?*
Q=you me-see-PAST
'Did you see me?'

d. *áu=nam i-q̓inú-ta*
now=you he-see-will
'Now he will see you.'

This grammatical pattern facilitates the construction of parallel lines starting with the same word, like those beginning with the particle *ku* 'and' and *=(na)taš* 'we' in (6).

(6) SAHAPTIN PARALLELS WITH PERSON CLITICS — V. Hymes 1987: 71

kútaš kwná wínana,	And we went there,
kútaš wínana áu,	and we went then,
kútaš áu panaitíya.	and we then climbed.

Sahaptin is relatively polysynthetic. The large number of affixes also facilitates the creation of parallel constructions whose lines begin or end with the same morphology.

The lines in (7) are linked by the third person subject prefix *i-*, the prefix *wáša-* 'on horseback', the root *wi-* 'go', and the suffixes *-kik* TRANSLOCATIVE 'away' and *-a* PAST.

(7) SAHAPTIN PREFIX PARALLELS — V. Hymes 1987: 75

áu táa · · · · 'aš	Now, getting da-a-ark,
iwiyálaikika Mílipa,	she got right along the Warm Springs R.
ixásuničanwikika,	she rode down,
ixásuwaičnkika,	she rode across,
iwínakika.	she went on.

When direction, tense, and aspect suffixes are the same, as in (7), they can serve to group lines together into a verse; when they differ, they can mark a division. Rhetorical vowel lengthening like that in the first line of (7) occurs chiefly in the first lines of verses or stanzas. It thus indicates the beginning of new units.

Particles play an important role in marking the structure of narratives. They are used both to create parallel patterns within units and to signal the beginning of new units. Common Sahaptin particles in this function include *áu* 'now, then' as in (7), *kú* 'and, but, so' as in (6), *áuka* 'now then, so then, and then', *ánčа(xi)* 'again (the same)', *kúš* 'thus', and *kúšxi* 'in the same way'.

Narrative structure is also indicated prosodically. Verses like that in (7) are typically spoken with sentence intonation, beginning on a high pitch which descends over their duration to a final full fall. Hymes also noticed a tendency among Sahaptin women narrators 'for the first lines of verses that have raised pitch to have also thin voice quality and lowered volume, sometimes so faint as to be almost inaudible' (1987: 78). Any deviations are significant. In a verse describing people climbing a hill, for example, 'the pitch on the word for steep (which was a line in itself) went way up and then way down as they descended the hill' (1987: 78).

The structuring devices tend to work in concert, 'so that a stanza beginning that had been suggested by particle, time word, change of scene or character, will also often turn out to be marked by a sharp change in pitch or in voice quality' (1987: 65). They may also be opposed for special effects. 'Though most verses end with a final fall in pitch and a pause, there seems to be a pattern of running together the final

verses of a scene or act or narrative. This running together is characterized also by increased tempo, almost like a racing to the finish' (1987: 78). The acceleration, observable in much narrative in the West, serves to heighten excitement at the climax.

Virginia Hymes found recurring pattern numbers in the Sahaptin narrative. 'One is perhaps not surprised to find that not only do events occur five times but that there are often five lines in a verse, five verses in a stanza, and so on' (1987: 70). She noted sets of three as well: lines, verses, stanzas, and even scenes or acts in the Onset-Ongoing-Outcome relationship found by Dell Hymes in narratives from the neighboring Chinookan languages. Such a triplet appears in (6).

Other formal registers can be found in the ceremonial language of formal oratory and ritual. Even more than narrative, it may be characterized by special prosody, vocabulary, metaphor, repetition, and strong textual structure. A useful discussion of cross-cultural similarities in ritual speech is in Du Bois 1986.

Ceremonial language typically shows distinctive prosody and marked voice quality, but the nature of these features varies across cultures. Descriptions of several styles of oratory are cited by Miller (1996a: 231): the Nootka used a 'laconic, somewhat explosive style' (Drucker 1951: 269); the Patwin of Northern California 'a very high voice and jerky phrases' (Kroeber 1925a: 389); a Pomoan chief of Northern California 'a peculiar jerky delivery, in detached statements, with endless repetitions' (Kroeber 1925a: 252); the Mojave and Quechan of Arizona an 'abrupt, staccato, forced delivery' (Spier 1933: 168).

At the same time, ritual speech is usually characterized by its fluidity, because it is highly planned. Ceremonial language is particularly developed among the Iroquois of the Northeast. Extensive ceremonial speeches are documented for Seneca in Chafe 1961, for Cayuga in Foster 1974a,b, 1980, and for Onondaga in H. Woodbury 1992. In his discussion of Seneca ritual speech, Chafe comments that 'the relative permanence of rituals allows them to be planned and polished in ways unavailable to fleeting conversations', unlike normal spoken language which 'is full of false starts, repetitions, and afterthoughts' (1981: 134). Describing Wintu shaman speech in Northern California, Schlichter notes the absence of hesitation forms (1981a: 123). She also comments on the highly polished nature of the ritual speech, which shows longer words and sentences than colloquial language, and an increase in subordination and left-branching. Similarly, Bunzel cites the fluidity expected of Zuni ceremonial speakers who must 'above all, speak without any hesitation or bungling and for as long as possible' (1929/30: 615 cited in Du Bois 1986: 318).

Ceremonial speech is often distinguished by special 'chanting' intonation, showing restricted variation in pitch and rhythm. Chafe describes Seneca longhouse speeches as consisting 'of a series of short phrases, each ending in a rising intonation contour, at the end of which there is a final phrase with a falling pitch contour. Almost no

intonational variety is possible' (1981: 140). In an impressive volume on oratory in Tlingit, a language of Alaska, the Yukon, and British Columbia, Dauenhauer & Dauenhauer report that 'most traditional Tlingit oratory is delivered in a "chanting" style, with the voice dramatically projected and pitched several notes higher than normal speech. This is partly in order to be heard without the use of microphones at a large gathering, but it also creates a characteristic delivery style unique to oratory and quite different from narrative performance such as story telling' (1990: 76).

Ceremonial language is also characterized by distinctive vocabulary. Sometimes the words are simply doublets for colloquial terms. Schlichter notes, for example, that the Wintu word *ha·haq* 'look upon me!' is an exclamation used only by shamans and not related to the word for 'see, look' (1982: 107). White lists a set of words from Santa Ana Keresan (Pueblo Southwest) 'which are used only in ceremonial occasions, in ritual contexts. These words are the exact semantic equivalent of words employed in ordinary discourse. Thus when speaking of the mountain bluebird in ordinary discourse one says *coroyá*. But in ritual contexts one always says *sto·c*' (1944: 163). Some of the doublets show some resemblance in form, such as the sacred *hia·wa* and profane *hiya·nʸ* 'road'. But many show no similarity at all, such as the sacred *onaɒi·st* and profane *ti·mɪ* 'clothing'. Describing Zuni sacred speech, Newman reports that 'insofar as its denotative meaning is concerned, *pinnanne* in the sacred meaning of 'life, breath' replaces the neutral forms of *ho??i-* 'to be alive' and *yanhaku-* 'to breathe', adding that 'because the realm of religion carries high value in Zuni culture, the words habitually employed in sacred contexts acquire connotations of dignity and high status' (1964 [1955]: 398-9).

The vocabulary of sacred language is generally considered more archaic than that of colloquial language, handed down with little alteration as the ceremonies themselves are handed down, and in many cases its greater age can be demonstrated. The Wintu *ma·qa* 'hence, it follows', used by shamans in ritual, was rare in normal speech when the ritual was first recorded in the 1930s and was obsolete by 1980, though it was remembered then by speaker Sadie Marsh as part of a story told by her mother (Schlichter 1982: 108). White (1944) cautions against the assumption that ceremonial vocabulary is always older than profane, showing that many ritual terms used in the Pueblos are borrowed from neighboring groups, probably with songs and prayers. The word *hanati*, for example, appears in a song of the (Hopi) Oraibi powamu ceremony which is not understood by the Hopi. White traces it to the Keresan term *henati* 'clouds'. Another word in the song, *muuta*, he links to the Keresan *modi* 'youth, boy'. It is easy to understand why songs and prayers might be borrowed. Dauenhauer & Dauenhauer note that songs and dances are an integral part of Tlingit ceremonies. In the songs accompanying the *yéik utee* dances or 'Imitation of the Spirit' 'the spirits speak a spirit language other than Tlingit, so the song texts are very different, and

people don't understand them. This language seems in some cases to be a human foreign language, such as Haida or Tsimshian (songs were widely traded and otherwise exchanged among the Tlingit, Haida, and Tsimshian) and, in other cases, to be an unknown spirit language revealed to the shaman' (1990: 62).

Ceremonial vocabulary is typically characterized by euphemism, metaphor, and circumlocutions. In Wintu shaman speech, Schlichter notes the use of *yaleqta* 'to let go' in place of *minel* 'to die', and *ʔila·m se-tepčuna·* 'to bring a baby to life' in place of *ku·ra* 'to give birth'. Periphrastic expressions include *tu-winherestopi* 'used for that which is seen ahead' for 'eyes' and *ʔol-ḱokuwilisto·t* 'one who lifts someone up' i.e. 'supporter' in place of *puqat* 'wife' (1982: 107-9). Parsons reports that the Hopi use a phrase meaning literally 'here in the light' in prayer to mean 'in this life' (1939: 314 cited in White 1944). In Zuni, Newman notes that 'the ordinary word for 'frogs' is *takka*; in sacred songs 'frogs' are *woliye tinan kʔayapa*, literally 'several are in a shallow container' (such as a dish, puddle, lake)' (1964 [1955]: 398). In the Seneca Thanksgiving Address presented in Chafe 1961, the speaker says 'The new people, too, will be taking their places on the earth. And there will be a relationship when they want to refer to the earth: they will always say "our mother, who supports our feet".'

Chafe 1961: 18-19

(8) SENECA CIRCUMLOCUTION

akhíno?ę	*teyǫkwę:hsi?takę?sǽhkǫh*
ak-no?ę	*te-yǫkw-ę-ahsi?ta-kę?sæhkw-ǫh*
1PL/FEMININE.SG-mother	DUPLICATIVE-1PL.PATIENT-REFLEXIVE-foot-support-STATIVE
our mother	it supports our own feet
'the earth'	

The structures of many North American languages, including Wintu, Zuni, and the Iroquoian languages, lend themselves well to such periphrastic expression, due to their general polysynthesis. Single words are often composed of many meaningful parts, and their literal meanings are in many cases still perceptible to speakers. Indeed, words in all domains are frequently coined from complex descriptions, like the Seneca *joníhkais* 'the one who has a long tail' = 'mouse'.

Certain structural features recur commonly in ceremonial speech as well. Repetition is common on multiple levels. It may involve adjacent lines that share rhythm, vocabulary, and/or grammatical structure, as in the Wintu example in (9). Couplet constructions like these are used pervasively in Northern California narrative, oratory, and even conversation.

(9) WINTU SHAMANISTIC REPETITION — Schlichter 1982: 98

ʔel-ew	*ʔi-se·da*	*net*	*ʔuniweres*	*ni*	*ʔip-na-mina*
exist-PRIVATIVE	be-PRF-I	my	destination	I	know-REFLEXIVE-not

'I never thought this would be my destination;

ma·qa	*net*	*ʔuniweres*	*biya-kir-[r]-e·m*
hence	my	destination	be-COMPLETIVE-INFERENTIAL-DUBITATIVE

for this, I gather, has been my destination.'

Repetition can also be seen in the Iroquois speeches, as in the Cayuga lines in (10). The speaker has recounted that the Creator decided to plant many different kinds of grasses. They would grow in different ways and would appear in different array. The two statements match until the last word of each. These last two words begin with the same future-tense prefix *ę-* and are strikingly similar in their rhythm, consisting of the same number of syllables, the third of which is voiceless.

(10) CAYUGA CEREMONIAL REPETITION — Foster 1974a: 298-9

hęne:kwathó	*ne*	*tewahtįhahnǫ́ʔ,*
also	the	they are different

shę	*ni:yóht*	*shęh,*	*ętyonǫha:yéʔ*;
how	so it is	how	they will be growing

hęne:kwathó	*ne*	*tewahtįhahnǫ́ʔ,*
also	the	they are different

shę	*ni:yóht*	*shęh,*	*ękatįhsihák.*
how	so it is	how	they will be standing.

Ritual speech is often intricately structured on higher levels as well. The Seneca and Cayuga versions of the Thanksgiving Address in Chafe 1961 and Foster 1974a, for example, consist of a set of parallel sections opened, closed, and linked with recurring formulas. Each section opens with a formulaic statement approximately like the first five lines in (11) below. Each closes with an exhortation to give thanks. Discussion moves from the creation of the earth itself to bodies of water, grasses, hanging fruit, trees, wild animals, birds, our sustenance, the Thunderers, the Sun, the Moon and Stars, the Four Beings, the Wind, Handsome Lake, and finishing with mention of the Creator himself.

(11) CAYUGA THANKSGIVING ADDRESS — Foster 1974a: 303

hętá:	*ó:nę*	*néʔ*	*nę́h,*	*ętsitwathro:wíʔ,*
and	now	the	this	we will speak again

'And now we will speak again

né: né	*haǫhwáʔ,*	*tho*	*niho:yę́h,*
that	himself	there	so he did

about what he himself has done,

kaę́hyaté:	*heʔtrǫ́ʔ,*	*shǫkwayaʔtihsʔǫ́h.*
in the sky	he dwells	he body-made us

he who dwells in the sky, Our Creator.

hęné:	*né*	*hawe:ʔǫ́h,*
that	the	he decided

He decided that

ęwahyani:yǫthá:k,	. . .

there will be hanging fruit . . .
there will be fruit hanging [where the grasses grow on the earth]'

The repetition, intricate structure, and recurring formulas not only mark the formal nature of such speeches, they also serve a mnemonic function for the speaker.

5.4 Speech play

Literature on language games in North America is somewhat sparse. Speech play is apparently an area in which cultures differ considerably. Sapir went so far as to note:

> It is a well known fact, often stressed by Boas, that the American Indians do not go in for riddles and proverbs. What few exceptions have been found serve only to emphasize the rule. If to riddles and proverbs we add puns, as it seems we have a right to do, it begins to appear likely that the American Indian has a generalized lack of interest in light verbal fancy. There is plenty of metaphor in his rituals, there is considerable etymologizing *ad hoc* in his legends, and his oratory is famous, but the zest in quick, irresponsible reinterpretation of familiar words or phrases which lies at the bottom of the pleasure that we experience in the telling of riddles, proverbs, and puns seems strangely un-Indian . . . (Sapir 1932: 217)

Yet a zest for 'quick, irresponsible reinterpretation of familiar words or phrases' is very much in evidence in many North American groups, though not necessarily in the form of riddles or proverbs. The Iroquois, for example, are masters of quick verbal

wit and have a long tradition of its cultivation and enjoyment. Humor and play are strong components of daily social life. And of course a keenly-developed sense of humor underlies narrative traditions all over the continent, such as the Coyote stories.

Examples of speech games have been recorded from several groups. At the Haskell Institute in 1962 Dundes collected a tongue-twister from a 17 year-old Choctaw (Muskogean) girl from Ardmore, Oklahoma. She had learned it from her Mississippi Choctaw grandmother in the early 1950s. It plays on alternations between *š* and *w*.

(12) CHOCTAW TONGUE-TWISTER — Dundes 1964: 194

Question:	*šǫši*	*šua*	*šuakǫ*	*išowǫ*	
	worm	stinks	stinking	do you smell	
	'Do you smell a stinking worm?'				
Answer:	*ǫ*	*šǫši*	*šua*	*šuakǫ*	*hówali*
	yes	worm	stinks	stinking	I smell
	'Yes, I smell a stinking worm.'				

Dundes points out that tongue-twisters have added value when mistakes could yield other actual words. That in (13)a, given to him by a Creek girl from Holdenville, Oklahoma, was a source of humor because it might be pronounced as in (13)b.

(13) CREEK TONGUE-TWISTER — Dundes 1964: 195

a. *čǎsi* *čiáča*
pumpkin do you want
'Do you want a pumpkin?'

b. *čəsída* *čiáča*
to carry me do you want
'Do you want to carry me?'

Rigsby was given a tongue-twister in Gitksan (Tshimshianic) by Wallace Morgan of Kitwanga, British Columbia, from his youth. (=CONN is a connective enclitic.)

(14) GITKSAN TONGUE-TWISTER — Rigsby 1970: 212-3

nagáksdi·	*gá?aɬ*	*ɬagaχgá·kʷɬ*
na-qaks-tii	*ka?=ɬ*	*ɬa-qax-qaak-kʷ=ɬ*
by.me-be.first.time-CONTRASTIVE	see=CONN	RELATIVE-PL-be.tough-PASSIVE=CONN

'I have just seen for the very first time

ɬagaxʷgákʷɬ	*ɬagaχ̓q̓á·χ̓ɬ*	*gá·qʰ*
ɬa-qaxʷ=ɬ	*ɬa-qax-q̓aax=ɬ*	*qaaq*
RELATIVE-PL-sinew-CONN	RELATIVE-PL-sinew-CONN	raven

the toughness of the sinews of the wings of the raven.'

Articulatory challenges are presented by the contrasts among palatals, labio-velars, velars, and uvulars, and among plain stops, voiced stops, ejectives, and fricatives. Tongue-twisters in Crow, a Siouan language of Montana, are in Lowie (1914).

Monica Brown, a Plains Cree speaker from Saskatchewan, performed a tongue-twister that consisted of an entire, carefully constructed anecdote (p.c. 1982).

Another source of humor can be puns. Albert Alvarez, a speaker of O'odham (a Uto-Aztecan language formerly known as Papago), published a dozen puns, noting that 'the Papago [puns] turn upon intentional misunderstanding of ambiguous sentences. This form of verbal play is extremely common among Papagos.' (1965: 106). Alvarez's puns involve exchanges between two speakers.

(15) TOHONO O'ODHAM PUNS — Alvarez 1965: 107

a. A: *ʔiʔiɨt múl g ñówĭ*
'My arm got broken.'

B: *tp ʔɨ̀ḍa čim slíalga.*
'I presume it had a lot of money before.'

b. A: *ʔab ʔo hím g mí·ṣ.*
'Here comes the religious person.'

B: *pɨ́gi, tt wo tgɨ́gus.*
'OK, let's eat.'

The pun in (15)a is based on the ambiguity of the verb *ʔimúlin*, which can mean either 'to get broken' or 'to be broke, bankrupt' (a calque). That in (15)b is based on the ambiguity of *mí·ṣ* as either 'religious person' or 'table'.

Sapir was told of two Navajo puns in 1929 at Crystal, New Mexico. One is particularly sophisticated. At a council, the leader of one group said *xàcɨ́è' nòhònò''à·* 'You people decide on one thing!'. A cripple whispered to his companion, *nácìcì·'à·'* 'Pick me up!'. His friend picked him up and, holding him in his arms, asked *xâ·dìc nòhòn̓cà·'* 'Where am I to put him down?' Everyone laughed. The verb root in each utterance is *-'à·'* 'to handle a round object'. It was used by the chief in its abstract sense for 'handle the affair, words, plan, date, decision'. It was used creatively by the cripple, because a different root is normally used for picking up a person. Sapir comments that 'the wily cripple, turning his helplessness to humorous account, classifies his hunched up body as a "round object", like a potato, apple, watch, or rock . . . The quick understanding by the second punster of the cripple's use of *-'a·'* socializes the pun and kindles it into something like satire of the ponderous doings

of important people' (1932: 218).

Chafe 1998 presents three puns from Seneca. One is bilingual. The first, bilingual interpretation is innocent enough, but the fully Seneca interpretation is not, a frequent feature of puns.

(16) SENECA BILINGUAL PUN

a.	*oʔgíʔ*	*daːg*
	oʔ-k-i-ʔ	*dog*
	FACTUAL-1SG.AGT-say-PRF	dog
	'I said "dog".'	

Alberta Austin speaker, to Chafe (in press)

b.	*oʔgíʔdaːg*	
	oʔ-k-iʔt-ak	
	FACTUAL-1SG.AGT-excrement-eat.PRF	
	'I ate excrement.'	

Puns are also given in Dorsey 1884 in Omaha (Siouan), Susman 1941 in Winnebago (Siouan), and Reichard 1947: 30 in Coeur d'Alene (Salishan).

Rigsby 1970 also provides some Gitksan riddles, some of which are similar to widely known English riddles. It is clear that humor has always been an important part of culture in North America. The age of these particular forms of language play, namely tongue-twisters, puns, and riddles, is not known. Rigsby does note that evidence of an indigenous riddling tradition in Gitksan is provided by the existence of the word *yeek̓* 'riddle', which has the canonical shape of regular Gitksan morphemes, so is not a periphrastic form, and has no other meaning.

5.5 Plains Sign Talk: PST

Plains Sign Talk (PST) is a medium of communication using the hands that became a lingua franca over a wide area, from the Gulf and northern Mexico north to Manitoba, Saskatchewan, and Alberta, and from the Missouri west to Idaho.

The use of a conventionalized sign language in North America apparently predates contact with Europeans. Some of the earliest European reports of encounters with peoples of the Gulf coast and Texas in the Southeast mention extensive communication by signs among groups who did not otherwise share a common language (Wurtzburg & Campbell 1995). Descriptions come from Alvar Núñez Cabeza de Vaca, one of four survivors of the 1527 Narváez expedition to Florida; from Pedro de Casteñeda de Nacera's account of the Coronado expedition of 1541-2; from Pierre and Jean-Baptiste Talon, among the few survivors of the 1688 massacre of La Salle's Fort Saint Louis colony in present Texas; from Simars de Belle-Isle, enslaved for a year in 1719 by the Akokisa; from a 1740 description of the five missions of the Colegio de la Santa Cruz in Texas; and others. The 1740 report states, for example, that 'Although there are many languages in these five missions, ... the language of making signs alone is universal in all the nations, making long orations for any purpose, as if it were just any other language that is spoken' (Fernández

Santa Ana 1961: 308 cited in Wurtzburg & Campbell 1995: 160). Most of the reports come from persons who had spent years in the area.

Conventionalized sign talk apparently spread from the Gulf and Southern Plains northward into the Central and Northern Plains. In 1805 Lewis and Clark noticed that people on the Northern Plains from different language backgrounds could not understand each other without interpreters, but later in the nineteenth century sign talk was used throughout the Plains. During the twentieth century it spread into Manitoba, Saskatchewan, and Alberta. It is now known primarily by elders, due largely to its replacement by English as a lingua franca. In the Northern Plains it is used at the Fort Belknap, Crow, Northern Cheyenne, and Blackfeet reservations in Montana, and at the Blood Reserve in Canada (Farnell 1995: 2). It is also used as a first language by some deaf members of these communities (McKay-Cody 1996). (It is distinct from ASL or American Sign Language.)

The more nomadic groups were reputed to be the best signers. In the nineteenth century the Kiowa (Kiowa-Tanoan) were known to be highly proficient and may have spread signing northward. When La Mont West visited Plains communities in 1956 he found signing still practiced, particularly on intertribal ceremonial occasions but also in storytelling and conversation, even among speakers of the same language. He was told that the Crow (Siouan) were responsible for spreading the system into the Plateau. The Cheyenne, Blackfeet, and Arapaho (all Algonquian) and the Comanche (Uto-Aztecan) were also known to be proficient signers. Good signers were also cited among the Nez Perce (Sahaptian), the Flathead (Salishan), the Gros Ventres Atsina (Algonquian), the Oglala (Siouan), and the Hidatsa (also Siouan). Dialect differences can be perceived, but they do not seriously hinder communication. West identified a major dialect split between the Northern Plains and communities in Canada. The system must be learned, and not all community members knew it even during the nineteenth century, though its strong iconic component would facilitate learning.

Detailed description of sign talk began in the late nineteenth century with two army officers. Garrick Mallery published a 3000-entry dictionary and texts (1880, 1881), and William Philo Clark a dictionary of over 1000 entries, including around 100 personal and place names (1885). Additional dictionaries are in Hadley 1893 with about 600 entries, Seton 1891 (700), Tomkins 1926 (500), and Hofsinde 1956 (400). Other works include Scott 1898, Critchley 1929, Hofsinde 1941, Cody 1952, Kroeber 1958, Voegelin 1958, Ljung 1965, and others in Umiker-Sebeok & Sebeok 1978. West 1960 contains an in-depth analysis of Plains Sign Talk with a 3500-entry dictionary. Farnell analyzed the signing that accompanies Assiniboine storytelling, transcribing performances in Labanotation (originally devised for dance) (1994, 1995). Several film records exist. General Hugh Scott filmed a dictionary on the Blackfeet Reservation at Browning, Montana in 1930, now in the National Archives Audiovisual Division in

Washington, D.C. (Gp 106.13-5). Farnell videotaped performances discussed in her 1995 work, available on compact disk from the University of Texas Press. Overviews of the history, use, and nature of PST are in Taylor 1978, 1981, and 1996a,b.

Signs have sometimes been described in terms of distinctive features, much like the sounds of spoken language (Kroeber 1958, West 1960). The features distinguish the shape of the hand(s), the areas in which a gesture is made (points of articulation), and the direction and nature of motion involved. Hand shapes include, for example, an open hand, closed hand, one or more fingers extended, straight or curved, and others. Points of articulation are usually places on the body near which a sign is made. The hand(s) may be stationary or, more often, move up, down, to the left or right, forward, back, and in straight lines, in curves, in circles, trembling, etc., with one hand alone or both moving in parallel or interacting. Farnell points out that the representations of signs made by Plains Indians on petroglyphs contrast markedly with the pictorial diagrams made by non-Indian observers. The petroglyph signs 'appear as rather abstract designs that contrast with the surrounding iconic representations of persons and objects. This is because what is recorded is the path of movement of a sign, not the body parts that produce that movement' (1995: 244). Signing is viewed as dynamic rather than a series of positions.

The iconic basis of many signs is easy to detect. The sign for both CAR and DRIVE, for example, is made by imitating the action of hands on a steering wheel. The sign for DANCE is 'an iconic representation of an alternate stepping action, a basic step pattern found in many otherwise radically different dance styles on the Plains' (Farnell 1995: 47). The same sign is used for PARTY. The iconicity alone is not sufficient for immediate understanding, however; learning of conventions, backed up by cultural knowledge, are necessary as well. The term for the Arapaho is literally TATTOOED ON THE CHEST; that for the Cree is BRAID FALLING DOWN THE RIGHT CHEEK. Farnell points out that 'the PST sign BUFFALO (representing horns) is perfectly transparent in the context of a discourse about hunting or trading on the Plains, but out of context and without any word gloss in explanation such a sign could, for a European, equally refer to the devil, any sort of horned animal, or even some kind of hat or hairstyle' (1995: 50).

Signing has been observed to occur both with and without speech. Dodge 1882, West 1960, Bolen & Furbee 1991, and Farnell 1995 note its use in tandem with speech, but Kroeber 1958 reported that the signing he witnessed around 1900 was completely silent. When the two cooccur, they may be parallel or contribute distinct information. Farnell remarks that 'in the context of [Assiniboine] storytelling performances, both speech and manual gestures provide an integral part of the narrative sense, and the latter are not simply dramatic enhancement nor a repetition of the spoken narrative' (1995: 2-4).

PART II

CATALOGUE OF LANGUAGES

6

Relations among the languages

Part II of this volume contains a catalogue of North American languages. It is organized according to a genetic classification currently accepted by most specialists in the field. Languages are arranged alphabetically by **FAMILY** (in boldface caps), that is, in groups known to have developed from a common parent language. Most language families consist of SUBGROUPS of languages (identified in small caps) that have shared a period of common development. Within each subgroup, individual **languages** are listed in lower case boldface, followed by their *dialects* in italics.

The catalogue lists all attested languages indigenous to the continent, but there were undoubtedly other languages that have disappeared with little trace. Early historical accounts refer to some otherwise unknown tongues, but without documentation it is impossible to determine whether they were in fact distinct languages, rather than languages now known under other names or dialects of known languages. Describing the situation in the Southeast, for example, Haas remarks that:

> Names like Avoyel, Taensa, Koroa, Grigra, Yazoo, Tiou, Yamacraw, Yamasee, Ais, Tequesta, Calusa, and many, many others remain to haunt us. Even though some of these have been asserted to be the 'same as' or 'closely related to' other known languages, we can never be sure in any case where no vocabularies exist. In case after case, when identifications were made on the basis of circumstantial evidence or of the statements of travellers or missionaries, the information was found to be incorrect when actual linguistic material was finally obtained. After all, Ofo was thought to be Muskogean because a Tunica Indian recalled one word of the language which began with an /f/ and this was taken to be diagnostic; but when a full vocabulary was finally obtained it was seen to be incontrovertibly Siouan. (Haas 1973: 590)

A number of other named but unattested languages must remain unclassified. Guale, spoken on the Georgia coast, was described in the sixteenth century by the Spanish Jesuit missionary Domingo Agustín Váez, but all of his materials have disappeared. Others are represented by only a very few words or names, such as Ausaima, Aranama, Bidai, Chome, and Cusabo.

Information provided for the languages in the catalogue includes where they are

spoken, the approximate number of speakers, major published sources of information on them, and general structural characteristics. Assessing the number of speakers of a language is seldom straightforward. What it means to be a speaker is a matter of judgment, and people vary in their criteria. For some people, a true speaker must control a full range of genres and rhetorical devices, as well as a wealth of vocabulary in all domains. For some people, a speaker is anyone who is capable of carrying on a natural conversation. For some, it is anyone who can understand routine speech and make himself or herself understood. The number of speakers of a language is not always known even within the community itself. Bibliographic information on the languages is not uniform because the material available varies so widely. For some languages there is little more than a wordlist or two, so all extant information can be mentioned in a small space. For others there are substantial grammars, dictionaries, and text collections, as well as large bodies of scholarship on specific topics, so an exhaustive listing of resources would be impossible. In these cases readers are directed to the most important and accessible sources, primarily published material.

6.1 Dialect, language, and family

The labels **dialect**, **language**, **family**, and **stock** are technical terms in linguistics, though they have not always been used in the same way through the history of the discipline. Technically, *dialects* are mutually intelligible forms of speech, like the English of Dallas and San Francisco, or of Melbourne and Manchester. Different *languages* are by definition not mutually intelligible, like English and German, or Arabic and Japanese. The intelligibility criterion is followed here because it is the one most often asssumed in the literature. In practice, however, distinguishing languages from dialects is not always straightforward.

Boundaries between the two can be fuzzy. Understanding is a matter of degree, and there is no rule concerning how much must be understood, or how readily. Furthermore, individual speakers vary in their abilities: some individuals simply understand unusual forms of speech more readily than others.

The existence of dialect chains further complicates the issue. The Keres language is spoken in a group of pueblo communities in New Mexico: Acoma, Laguna, Zia, Santa Ana, San Felipe, Santo Domingo, and Cochiti. The dialect of each pueblo is mutually intelligible with that of its immediate neighbors. Thus Acoma and Laguna speakers understand each other easily. Those separated by greater distances have more difficulty, such as Acoma and Cochiti speakers. Similarly in the Arctic, members of Inupiaq-Inuit communities, which stretch from the Bering Strait in Alaska to Greenland, can all understand the speech of their neighbors, but communication between Alaskans and Greenlanders is challenging. Both Keres and Inupiaq-Inuktitut are usually classified as single languages, but sometimes they are divided into groups

of dialects. Changes over time may introduce further complications. Lower Tanana and Tanacross, two Alaskan Athabaskan languages, were once grouped together as varieties of the same language, members of a dialect chain. When the intermediate dialects disappeared, however, these two, which were not mutually intelligible on their own, were classified as distinct languages (Krauss & Golla 1981: 75-6).

In non-technical usage, the terms *dialect* and *language* can have social, ethnic, and political connotations. Though varieties of Swedish and Norwegian are mutually intelligible, they are conventionally referred to as separate languages. Rigsby 1987 notes the importance of such connotations with respect to the Gitksan, a Tshimshianic people of British Columbia. Gitksan and Nisgha speakers can understand each other immediately, so technically they speak dialects of a single language, usually referred to as Nass-Gitksan. The Gitksan, however, feel strongly that they are a distinct people, with their own language. Furthermore, as Rigsby notes, 'matters of social and cultural evaluation may lead speakers to deny or affirm that one or another language variety is intelligible to them' (1987: 365, citing Wolff 1959, 1967).

The terms also sometimes carry connotations stemming from earlier popular usage. The term **dialect** was traditionally used in Europe for non-standard varieties of a language, those that were not the official language of a political institution. Thus while the variety of German used in writing, education, and at formal public functions was referred to as a (standard) **language**, all other forms of German were referred to as (mere) dialects, speech without official status. As Europeans began to discover North American languages, they sometimes referred to them as dialects as well, probably because they did not have an institutionalized written standard.

A slightly different sense of the term dialect can be found in linguistic work up through the early twentieth century, when it was used to refer to all speech varieties known to be genetically related at any level. Rigsby notes that under this usage English, German, and Swedish might be referred to as Germanic dialects, and 'it is in this sense of shared historical origin that Boas usually referred to the Tsimshian and Nisgha languages as dialects of Tsimshian' (Rigsby 1987: 364). Similar usage can be seen in discussions by Dixon and Kroeber of genetic relations in California: 'By 1903 at least a slight body of information had been secured on the grammar of representative *dialects* of each of the 22 families then recognized in California' (1919: 48). Since that time linguistic usage has become more standardized so that the term dialect is used for mutually intelligible varieties of a single language. The intelligibility criterion has been maintained throughout the classification given here, insofar as it is possible to judge, in the interest of consistency. It should be noted that this occasionally differs from Goddard's 1996a classification in which 'in some cases social and political distinctness has been a factor in the decision' (Goddard 1996a: 8).

A language **family**, as noted above, is a set of all of the languages that have

evolved from a common ancestral language, as each generation of speakers felt they were passing on their language to their children. English, German, French, Russian, Greek, Albanian, Armenian, Persian, Hindi, and a number of other languages comprise the Indo-European family. On occasion the term has been used for a branch of a family such as Germanic, a subgroup of Indo-European consisting of the more closely related German, Dutch, Frisian, English, Danish, Gothic and other languages. More commonly, however, *family* is used in the inclusive sense to refer collectively to all languages demonstrably related to each other. This is the usual understanding of the term in work on North American languages and the one observed here.

6.2 Genetic relationship

The determination of genetic relationship in linguistics involves the identification of similarities among languages that are too systematic and pervasive to be due to borrowing or chance, and that are not simply language universals. The only possible explanation for them must be inheritance from the same ancestral language. Identifying close relationships is usually relatively easy, because languages that have been separated for only a short time usually retain most of their common heritage. The longer groups of speakers have been apart, the more different their speech becomes. Fewer cognates remain, and those that do become harder to spot. At a certain point it becomes difficult to distinguish the few remaining similarities from early loans and chance resemblances. In North America probably all of the genetic relationships obvious from simple inspection have long since been identified. Detailed histories of classification of North American languages can be found in Goddard 1996b and Campbell 1997. The discovery of more remote relations must depend on additional methods, such as the comparison of reconstructed parent languages and the recurrence of idiosyncracies stemming from earlier times.

The list of families presented here incorporates only those relationships considered definitively established. Proposals that have been made concerning possible distant relationships, that is, stocks, are discussed in section 6.3. This does not mean that the remote relationships are impossible or even unlikely, only that they await full demonstration. Maintenance of the distinction between family and stock is important because of the nature of proof of genetic relationship. Though it is clear what kinds of evidence are necessary to establish a relationship, there is no evidence that can disprove one. If languages have been mistakenly declared related, the only way to correct the mistake is to go back through the evidence originally proposed in its favor and show that it was insufficient or faulty. It is simpler not to declare a relationship prematurely in the first place. The need for caution in stating relationships does not diminish the importance of preliminary proposals. Hypotheses are a necessary first step toward genetic classification at any level.

6.3 Stocks: hypotheses of more remote relationships

A number of hypotheses have been proposed concerning possible deeper genetic relationships. Many of them stem from the ambitious classification proposed in 1921 and 1929 by Sapir in which all of the families and isolates of North America were grouped into six overarching superstocks. Many proposals have been discarded as more information has become available on the languages themselves. Others have been shown to be valid, and the proposed groupings are now recognized as established families. Some hypotheses will always remain impossible to evaluate, because the languages are no longer spoken and data from them is too sparse. Several, however, continue to be a focus of vigorous investigation, and considerable progress has been made, particularly recently, as the languages have become better documented and their structures better understood, and as parent languages have been reconstructed.

Major hypotheses of relationships beyond the family level are summarized here in alphabetical order. Further detail on the proposals can be found in Campbell & Mithun 1979, Goddard 1996b, and Campbell 1997.

Aztec-Tanoan

In his 1921 and 1929 classifications Sapir proposed that the Kiowa-Tanoan and Uto-Aztecan languages of the Southwest, along with Zuni, might be remotely related. Following his suggestion Whorf & Trager assembled 102 possible cognate sets supporting the relationship (1937). When he reviewed the evidence in 1954, Newman found it 'sound but not entirely conclusive'. Several years later Miller (1959) noted problems with certain sets but remained open to the possibility of relationship. Shaul (1985) pointed to a possible source of one correspondence in contact. Benefiting from progress made in documenting and analyzing the individual languages, and in reconstruction within the families, Davis presented a revised list of sound correspondences in 1989 along with possible cognates, but noted that many of the forms shared only one syllable. He remained optimistic, considering 52 of the 102 sets proposed by Whorf & Trager to have 'a good possibility of being valid', though noting that any relationship would be remote. Campbell, on the other hand, is pessimistic, questioning most of the remaining sets on the basis of their brevity, excessive semantic latitude, and possible sources in contact (1997). At present it is generally agreed that a remote relationship between the two families remains undemonstrated but worthy of continuing attention.

Gulf

When the languages of the Southeast first became known, they were grouped together into a single stock termed 'Floridian' or 'Southern', as much because of their geographical proximity as their similarities (Duponceau 1819, Pickering 1831). Gallatin (1836), however, distinguished Atakapa, Chitimacha, Natchez, Tunica, the Muskogean languages, and others as genetically separate entities pending further evidence, and the distinction was maintained in Powell 1891.

In 1873 Brinton proposed a connection between Natchez and the Muskogean languages, a hypothesis reaffirmed by Swanton in 1907. Swanton offered new lexical and structural resemblances as further evidence of the connection in 1924. In 1956 Haas, noting that 'the relationship of Natchez to the Muskogean languages has been generally accepted for over thirty years', provided lists of proposed cognates and recurring sound correspondences between Natchez and Proto-Muskogean, and pointed out structural resemblances. She emphasized the fact that Natchez should not itself be considered a Muskogean language, but might be more remotely related to the family as a whole.

In 1919 Swanton compared the sound systems, grammars, and lexicons of Atakapa, Chitimacha, and Tunica, concluding that they were 'widely divergent' members of a single stock, which he termed 'Tunican', adding that 'it remains to be seen whether the connection ends here, or whether the newly identified group is affiliated with the Muskhogean stock to the east' or others (1919: 56). Swadesh brought his own work with Chitimacha to the question, presenting regular sound correspondences between Atakapa and Chitimacha and over 200 possible cognate sets (1946a). Many of these actually conflicted with those proposed earlier by Swanton. In 1947 Swadesh added a *k/w* correspondence reconstructed as $*k^w$. Gursky (1969) undertook three binary comparisons, Atakapa-Chitimacha, Chitimacha-Tunica, and Tunica-Atakapa, and provided additional possible cognate sets and sound correspondences.

In 1951 and 1952 Haas presented possible cognate sets for 'water' and 'land', as preliminary evidence of a possible relationship between Natchez-Muskogean and Atakapa-Chitimacha-Tunica, which she named 'Gulf'. She also investigated a possible Siouan and Algonquian affinity but found little evidence of one (1958b). She notes that if there are relationships among languages in the Gulf, the closest to the Muskogean family would be Natchez, followed by Tunica, then Atakapa, and finally, though questionably, Chitimacha (p.c. 1989). The possibility of an even more remote relationship to Wappo and Yuki has been suggested as well. (See Wappo-Yukian.)

Because the Gulf relationship, if there is one, is so distant, because resemblances could be the result of the long contact among groups in the Southeast, and because Natchez, Tunica, Atakapa, and Chitimacha are no longer spoken, it may never be possible to establish the exact nature of the connections among these languages.

Hokan

The term 'Hokan' was coined in 1913 from Atsugewi *hoqi* 'two', when Dixon and Kroeber proposed a genetic relationship among a group of California language families and isolates: Karuk, Chimariko, Shastan, Palaihnihan, Pomoan, Yana, Esselen, and Yuman (1913a, 1913b). They had noticed resemblances among the languages in 1903, but attributed them to common typology. Dixon had related Shasta and Palaihnihan in 1905 and added Chimariko in 1910.

In 1915 Kroeber added two more to the Hokan group: Seri and Tequistlatecan. Seri is spoken across the Gulf of California along the central coast of Sonora, Mexico. Tequistlatecan or Chontal of southern Oaxaca, Mexico, consists of two closely related languages: Huamelultec (Lowland Chontal) and Tequistlateco (Highland Chontal). These three had been linked to Yuman by Brinton in 1891 and Harrington in 1913.

In a major article in 1917, 'The position of Yana in the Hokan stock', Sapir published nearly 200 Hokan correspondence sets and suggested some Proto-Hokan phonological features. He added two more languages, Salinan and Chumash, noting that 'Salinan and Chumash are at present of more doubtful inclusion than the others' (1917a: 1). The two had been linked as 'Iskoman' by Harrington and by Dixon & Kroeber (1913b). The same year Harrington announced that Chumash and Washo were related, and Sapir noted Washo would then be Hokan (1917b). Washo was accordingly incorporated into Hokan in Dixon & Kroeber's 1919 classification.

In 1920 Sapir proposed that several languages of south Texas grouped together by Swanton in 1915, Tonkawa, Karankawa, and Coahuilteco, belonged with Hokan in a Hokan-Coahuiltecan stock. In 1925 he added Subtiaba of Nicaragua and Tlap(p)anec of Guerrero, Mexico, previously linked to Washo by Lehmann in 1920.

In 1953, Greenberg & Swadesh added the Jicaque or Tol family, consisting of two languages, that of El Palmar in western Honduras, represented only by a short wordlist from 1890, and Tol, of La Montaña de Flor near Orica, Honduras.

Further proposals have related Hokan languages to others in the Americas and as far away as Austronesia, but they have not withstood further scrutiny.

A number of the early proposals had been based on little data. Dixon & Kroeber 1913a contained only 5 correspondence sets, 'tongue', 'eye', 'water', 'stone', and 'sleep', and several grammatical features; 1913b contained 12 more sets. Once better documentation of some of the languages became available, detailed bilateral comparisons were undertaken, among them Palaihnihan and Shasta (Olmsted 1956-9), Yana and Karuk (Haas 1964b), Washo and Karuk (Jacobsen 1958), Eastern Pomo and Yana (McLendon 1964), Shasta and Karuk (Silver 1964), Seri and Chontal (Turner 1967, 1972, Bright 1970), Chimariko and Yuman (James Crawford 1976), Seri and Yuman (Judith Crawford 1976b), and Tlappanec and Subtiaba (Weathers 1976). Cochimí is now known to be separate but related to Yuman (Troike 1976).

Waterhouse 1976 adds evidence linking Tequistlatec to Hokan, and Oltrogge 1977 and Campbell & Oltrogge 1980 are optimistic about a genetic relationship between Tequistlatec and Jicaque. Rensch 1977 and Oltrogge 1977 provide evidence that Subtiaba-Tlappanec (Supanec) is part of the Otomanguean stock, so related to Hokan only if all of Otomanguean is. Coahuiltecan, earlier understood to consist of a variety of languages in south Texas, is no longer considered a genetic unit (Goddard 1979c). Of those languages, those that may be Hokan are Coahuilteco, an isolate, and those of the Comecrudan family.

Additional work on general Hokan includes Bright 1954, 1955, 1956, Haas 1954, 1963, 1964b, Olmsted 1965, Jacobsen 1967 and Silver 1976. In 1974 Gursky published 707 correspondence sets involving Hokan languages. More recently, Kaufman (1988) has reexamined previous work and reconstructed Proto-Hokan phonology, grammatical features, and an impressive list of grammatical and lexical etymologies.

At present, then, the most promising Hokan proposals link Karuk, Chimariko, Shastan, Palaihnihan, Yana, Washo, Pomoan, Esselen, Salinan, Yuman, Cochimí, and Seri. Tequistlatecan, Coahuiltecan, and Jicaque are still considered possible relatives, and Subtiaba-Tlappanec would be related to Hokan only if all of Otomanguean is. Coahuilteco and Comecrudan may be Hokan, though not necessarily as a subgroup. Any relation to Chumashan, Karankawa, and Tonkawa is now considered unlikely.

Evaluation of the Hokan hypotheses remains problematic. The antiquity of Hokan would be at least as great as that of Indo-European, if not much greater, but documentation of the languages is considerably more limited. Many of the languages are spoken in contiguous areas, with Karuk, Chimariko, Shasta, Palaihnihan, and Yana stretching across Northern California; Esselen, Salinan, and Chumash along the central California Coast; Yuman in Southern California across to Arizona and south into Baja California, with Cochimí, and Seri across the Gulf of California; and Karankara, Tonkawa, and Coahuiltecan along the Gulf of Mexico from south Texas into northeastern Mexico. The prolonged contact among speakers of many of the languages makes it difficult to distinguish true cognates from early loans. Furthermore, some languages proposed as Hokan seem to share more features with languages considered outside of Hokan than with others within Hokan (Haas 1964b). Hypotheses of a Hokan stock as a genetic unit continue to play an important role in prompting investigation of the historical relationships among these languages, but it should be recognized that Hokan is not yet considered a demonstrated genetic entity.

Langdon presents a complete history of scholarship on Hokan with full bibliography (1974) and followups (1979, 1986, 1996 with Jacobsen). Shipley provides useful overviews (1973, 1978), and Poser an evaluation of method (1995). Jacobsen 1979g contains an evaluation of work and additional material and Jacobsen 1996 an update on Washo and Hokan.

Macro-Siouan

The Macro-Siouan hypothesis relates the Iroquoian, Caddoan, and Siouan families. The possibility of a relationship was first proposed by Latham in 1860 (p. 327) though alluded to as early as 1846 (p. 44). Because the Siouan and Iroquoian languages have been better known for a longer time than those of the Caddoan family, evidence linking those two families was explored first. At present it appears that if there is a relationship, Iroquoian and Caddoan would constitute a subgroup, related in turn to Siouan. A summary of work on the question is in Chafe 1976: 43-53.

The possibility of an Iroquoian-Siouan connection was picked up by Morgan in his work on kinship terminology (1871: 150-1). Sixty years later Allen presented more systematic evidence for the proposal with 25 sets of similar lexical items gathered from material then available on the Iroquoian languages Cherokee, Huron, Seneca, Onondaga, Oneida, and Mohawk, and on the Siouan languages Lakhota/Dakota, Hidatsa, Ponca, Biloxi, Ofo, Tutelo, and Catawba (1931). He pointed out recurring sound correspondences and grammatical similarities, evidence he considered promising but insufficient to establish a relationship on its own. An additional 67 lexical sets were assembled by Chafe, accompanied by proposals for reconstruction (1964).

Evidence of a link between Siouan and Caddoan was further explored by Chafe (1976: 44-7), who noted similarities in instrumental prefixes and in postural elements within the verb. He considered the lexical similarities tantalizing but did not rule out the possibility of resemblance due to chance or contact. A discussion of the five Siouan terms in the comparison and of the structural similarities is in Rankin 1981.

In his 1929 Hokan-Siouan superstock, Sapir had included all three families, Iroquoian, Siouan, and Caddoan, and grouped Iroquoian and Caddoan together. Evidence of an Iroquoian-Caddoan link is in Chafe 1976: 47-52. Some lexical sets are given, then parallels in verbal morphology are laid out, with special attention to the complex pronominal prefix systems.

Chafe points out that the reconstructed phonologies of each of the families are considerably more similar to each other than are the surface phonologies of the individual modern languages (1976: 52). Additional work comparing the morphology and syntax of the three families is in Mithun 1991, 1993, and 1995. Campbell (1997) examines the evidence assembled so far and agrees that though it is suggestive, it does not constitute proof of relationship. As progress is made in reconstruction within each family, especially Caddoan, more similarities could emerge.

At present, relations among Iroquoian, Caddoan, and Siouan are not considered established, but the possibility merits further study.

Mosan

The Mosan hypothesis was a proposal that the Salishan, Wakashan, and Chimakuan families of the Northwest coast might be remotely related. A link between Wakashan and Chimakuan was first suggested by Bancroft (1882: 564), though little evidence was provided. Boas, Sapir, and Frachtenberg noted similarities among languages from all three families as they carried out fieldwork, mentioned by Boas in his Kwakiutl (Wakashan) sketch (1911: 427) and by Frachtenberg in an article on Quileute (Chimakuan) (1920: 295). Andrade also commented in his 1933 sketch of Quileute on 'a number of significant points of contact' between Quileute and Wakashan (1933: 151), and Swadesh published some lexical comparisons (1935, 1949). Frachtenberg proposed the name 'Mosan' for the group, based on similar terms for the numeral 'four' in languages of all three families: *mōs* or *bōs*. Sapir incorporated Mosan as a unit into his Algonkin-Wakashan hypothesis (1921, 1929).

Intrigued by the possibility of wider relationships, Swadesh assembled around 280 sets of lexical correspondences and resemblant grammatical morphemes as well as 16 points of structural similarity (1953a,b). He compared phonological inventories and reconstructed a possible Proto-Mosan inventory, proposing a time depth of 9000 years. In the same year he published some Kwakwala-Chehalis similarities noted by Boas (Swadesh 1953c) and Nootka-Quileute resemblances noted by Andrade (1953). Sapir, Andrade, and Swadesh found the similarities promising, though Boas was inclined to attribute them to longstanding contact. Somewhat later, however, Swadesh (1971) withdrew his support of the relationship. In a paper first presented in 1976 but not published until 1993, Jay Powell considered newly available material particularly from Quileute, Nootka, and Heiltsuk that might support a Wakashan-Chimakuan relationship, identifying recurring sound correspondences, but cautioning that the resemblances could be due to long contact.

At present the possibility of a genetic relationship among the three families has generally been abandoned by specialists (Hamp 1979: 1010, Jacobsen 1979: 796-7, Thompson 1979: 748-51, Kinkade 1990: 104-5, Beck 1997b). Many of the structural resemblances noted by Swadesh are found elsewhere in the Northwest and beyond, such as extensive suffixation, alternation of stems for number, elaborate locative suffixes, reduplication, optional tense, the use of demonstratives to nominalize predicates, and a distinction between presence and absence carried by determiners. Some other similarities, particularly the elusiveness of the noun/verb distinction and the enormous inventories of suffixes with lexical meaning are intriguing, but perhaps less compelling at close range. The lexical and structural resemblances are now generally attributed to contact.

Na-Dene

The Na-Dene hypothesis was a proposal that the Athabaskan languages (spoken in Alaska, Western Canada, Washington, Oregon, California, and the Southwest), Eyak (Alaska), Tlingit (Alaska, British Columbia), and Haida (Alaska, British Columbia) are genetically related. The history of the problem is discussed in Krauss 1964a, 1973a, 1979, Pinnow 1976, 1985a, 1990a, Golla 1991:130-1, Dürr & Renner 1995, Dürr & Whittaker 1995, and Renner 1995.

The possibility of a relationship was first considered by Fleurieu, who compared vocabulary from Chipewyan (Athabaskan), Tlingit, and Haida collected during the second half of the 18th century, but he found no relationship (1798-1800). Eyak was brought into the picture by the Russian Rezanov (Radlov 1858), who compared Tanaina (Athabaskan), Eyak, and Tlingit in an unpublished 1805 manuscript (now in the Gosudarstvennaja Biblioteka Rossii or State Library of Russia, formerly the Lenin Library). He attributed similarities to contact. Adelung & Vater, reviewing this material in 1816, concluded that Athabaskan, Eyak, and Tlingit might be related, but not Haida. In 1858 Radlov reiterated that grouping but considered the status of Haida unclear.

Boas (1894) and Swanton (1908: 472-85), who had worked further with Tlingit and Haida, remarked on resemblances between the two, primarily in their structures. Their observations prompted Sapir to group Athabaskan, Tlingit, and Haida into a stock he termed Na-Dene. He based the name on the Haida *na* 'house' and the Tlingit and Athabaskan *dene* 'person' (1915f). At this point Sapir lacked access to Eyak, but when he saw Eyak material collected by Birket-Smith and de Laguna in 1933, he immediately recognized it as related to Athabaskan. Most of the evidence for Sapir's 1915 proposal was structural, though Haida differs visibly from the others in degree of synthesis. He did include a comparative vocabulary of 98 items, of which 60 contain Haida forms, 30 of these both Tlingit and Haida. The proposal was met with skepticism by Boas (1920) and Goddard (1920), who attributed the resemblances to contact. In 1955 and 1956 Hymes proposed that perfect equivalence in verb templates might constitute evidence of relationship in the absence of lexical cognates and sound correspondences, citing the case at hand. During the 1960's Krauss undertook intensive work with Eyak, leading to a demonstration of its genetic relationship with Athabaskan (1964, 1965, 1968).

The relationship between Tlingit and Athabaskan-Eyak is more remote, but is now considered established as well (Pinnow 1964, 1966, 1968b, Krauss 1968, Hamp 1979, Krauss & Golla 1981, Krauss & Leer 1981). Though grammatical resemblances have been observed for some time, lexical cognates were at first difficult to identify. Leer has now assembled a substantial body of solid cognate sets showing recurring sound correspondences, and the relationship is considered established. On occasion the term

'Na-Dene' has been used for just this group, but for the sake of precision it is more commonly referred to as Athabaskan-Eyak-Tlingit.

By contrast, Haida is no longer generally considered genetically related. Some common structural features, such as the rarity of labials, OV order, and agent/patient categories, as well as number and possessive constructions, are now seen as areal phenomena, shared by Aleut as well, which is clearly unrelated (Krauss 1973a, 1979, Leer 1990, 1991). Levine, who himself worked intensively with Haida, considered all previous evidence submitted (1979) and found that most is spurious, due in large part to errors in transcription and analysis of earlier material. Some scholars continue to entertain the possibility of genetic relationship (Pinnow 1985a,b,c, 1986a,b, 1988b, 1990, Greenberg 1987, and Manaster Ramer 1996b, all working from published materials), but many specialists consider it unlikely.

Penutian

Penutian is a set of working hypotheses about possible genetic relations among certain language families of the West. It grew out of observations by Dixon and Kroeber in 1903 of typological similarities among five language families of California. In 1913 they proposed that the similarities might be due to common inheritance and named their stock 'Penutian', based on words for 'two' in member families: *pen* in Wintun, Maidun, and Yokuts, and *uti* in Miwok and Costanoan (Dixon & Kroeber 1913a,b). They published their evidence for the proposal in 1919, providing a list of 171 hypothesized cognate stems, shared phonological processes (epenthesis, contraction, metathesis, reduplication), preliminary sound correspondences, morphologically triggered ablaut processes, and shared suffix categories, including nominal case.

Sapir, who had been working with Takelma and Chinookan, saw evidence for positing a sister stock he termed 'Oregon Penutian' consisting of Takelma, Coos, and Siuslaw. Frachtenberg, who had also been working with languages in Oregon, noted similarities in stem formation among Takelma, Kalapuya, and Chinookan (1918) and predicted the eventual establishment of a common origin for Takelma, Coosan, Siuslawan, Yakonan (Alsea), and perhaps Kalapuyan and Chinookan. His observations coincided with those of Sapir, who integrated them into his 1921 classification. Here Sapir expanded the Penutian stock to four branches:

(1) California Penutian (Wintun, Maidun, Yokuts, Miwok, Costanoan)
(2) Oregon Penutian (Takelma, Coastal Oregon (Coos, Siuslaw or Upper Umpqua, Alsea), Kalapuya)
(3) Chinookan (along the Columbia River in Oregon and Washington)
(4) Tsimshian in British Columbia.

In 1929 Sapir expanded the Penutian proposal still further, adding two more branches:

(5) Plateau Penutian (Klamath-Modoc, Cayuse-Molala, Sahaptian)
(6) Mexican Penutian (Mixe-Zoque and Huave).

Plateau Penutian, which included languages all spoken east of the Cascade Mountains in Oregon and southern Washington, had been proposed as a unit in 1894 by Hewitt and Powell under the name Shahapwailutan. Freeland had amassed 108 lexical similarities between Mixe and various Oregon and California Penutian languages (1930), and Dixon had noted similarities between Zoque and California Penutian. Sapir accepted Radin's 1916 proposal of a link between Zoque and Huave. Sapir's proposals, like those of Dixon and Kroeber, were first inspired by typological similarities. He noted as well a characteristic disyllabic stem shape with vowel harmony, $CV_1CV_1(C_2)$, as in Takelma *yana* 'acorn' and *lopod-* 'to rain' (1921d).

Subsequent work took two directions. A few researchers sought to extend the proposals still further to a Macro-Penutian phylum, particularly Whorf 1935, Johnson 1940, Mason 1940, Swadesh 1954b, 1956, Newman 1964, and Greenberg 1987a, but those proposals are no longer pursued. Other work was directed first at binary comparisons between pairs of families, then at the addition of other families to hypothesized groups, and finally at multilateral comparisons. Histories of work on the Penutian hypotheses are in Hymes 1957, Callaghan 1958, Shipley 1973, Silverstein 1979, Campbell 1997: 309-22, and especially DeLancey & Golla 1997.

Progress has been made as individual languages have become better documented and understood, reconstruction has advanced at the family level, and researchers knowledgeable about the families have turned their attention to the issues, in part stimulated by a workshop on Comparative Penutian held at the University of Oregon in 1994. The current state of understanding is reported in DeLancey & Golla 1997. At this point it appears probable that families in the first five groups of Sapir's proposal (excluding those from Mexico) will be shown to be remotely related, though a number are no longer spoken, so little new data can be brought to the question. Evidence has been mounting of links among families of the original California Penutian 'kernel' (Wintun, Maidun, Yokuts, Miwok, Costanoan) and beyond (Shafer 1947, 1952, Hymes 1957, 1964a,b, Pitkin & Shipley 1958, Broadbent & Pitkin 1964, Berman 1983, 1989). Within California, Miwok and Costanoan are now definitively recognized as members of a single family, termed 'Utian' (Callaghan 1967). Yokuts and Utian may in turn share a special relationship as Yok-Utian (Callaghan 1997).

It is no longer thought, however, that the California families constitute a special branch of their own (Shipley 1980b, DeLancey & Golla 1997). Whistler 1977b and

Golla 1997 provide evidence that the Wintuan languages have deep historical roots in western Oregon. Speakers of the other California families apparently came to California through separate migrations of their own. Among the Oregon families, evidence of a genetic relationship between Sahaptian and Klamath appears in Aoki 1963b; Rude 1987; DeLancey, Genetti, & Rude 1988; and DeLancey 1992. Rigsby 1965 and Berman 1996 present evidence of relations among Sahaptian, Klamath, Molala, and possibly Cayuse, though the place of Cayuse must remain unclear due to the paucity of data. These languages may be as closely related to the California families as the California families are to each other (Shipley 1966, DeLancey 1987a,b, 1996). Relations of the Oregon Coast Penutian group (Alsea, Coosan, and Siuslaw) are examined in Pierce 1966, Buckley 1987, Golla 1997 and Grant 1997. Takelma and Kalapuya were once thought to constitute a family (Frachtenberg 1918, Sapir & Swadesh 1953, Swadesh 1965, Shipley 1969, 1970, Berman 1988). Tarpent & Kendall (1998) have now demonstrated, however, that they are no more closely related to each other than to other Penutian families. The hypothesis of the Chinookan family as a distinct unit within Penutian remains unchanged.

The most remote family hypothesized to be Penutian is Tsimshianic, of northern British Columbia. After careful comparison of forms from the languages and from Proto-Tsimshianic, Tarpent (1996, 1997) concludes that an affiliation is probable.

Wappo-Yukian

Wappo and Yuki have traditionally been classified together (Powers 1877, Powell 1891, Kroeber 1906, 1911, 1925, Elmendorf 1968), but Sawyer, who worked extensively with Wappo, concluded that shared lexical items are too similar to be cognates and are more likely the result of contact with neighboring languages (1980). Elmendorf, who worked with Yuki, remained unconvinced of the contact explanation and collected phonological, lexical, and grammatical evidence supporting a genetic relationship (1981, 1997). The two languages are discussed separately in the catalogue here not because the lack of relationship is considered established, but because the nature of the relationship remains an open question.

A further link between Wappo-Yukian and Gulf was first suggested by Swadesh in 1954 when he considered possible larger groupings. It has been taken up again by Greenberg (1987, 1996), Munro (1994), and Golla (1996b), but problems have been raised by Kimball (1992, 1997). A relationship would be surprising, given the geographic distance between the two groups (coastal California and the Southeast), yet it is considered worthy of further examination.

6.4 Language contact

Languages often come to share characteristics through contact among their speakers. In early stages of contact, names may be borrowed for novel items, such as trade goods or local places. With more intimate contact and especially bilingualism, borrowing may become more pervasive, including not only a wider range of vocabulary but also phonological, grammatical, and semantic patterns. Some samples of borrowing in North America are shown in section 6.4.1 below. As a result of ongoing contact, a group of languages may come to share a substantial number of features. Such a group is called a 'Sprachbund', and the geographical region over which extensive borrowing has taken place is termed a 'linguistic area', a 'convergence area' or a 'diffusion area'. Recognized linguistic areas in North America are described in section 6.4.2. Certain kinds of contact can result in the birth of new languages: trade jargons, pidgins, creoles, and mixed languages. This process is discussed in 6.4.3, and situations in North America in which it has occurred are described.

6.4.1 *Borrowing*

Communities have varied in their receptiveness to borrowing for both linguistic and cultural reasons. In the pueblo communities of the Southwest, for example, a resistance to loans from Spanish was observed by Dozier (1956, 1961, 1967).

> Tewa and Taos speakers are reluctant to employ loanwords in the presence of outsiders, a reluctance that I have attributed to adverse relations with the early Spanish civil and church officials (Dozier 1956: 150-1). This experience with Spanish officials I believe, has limited the number of Spanish loanwords in all the Rio Grande Pueblo languages, but Tewa and Taos speakers habitually purge their languages of even the few loans that have some stability in them when speaking in the company of Spanish-Americans or Anglo-Americans whom they suspect of knowing Spanish . . . Taos and Tewa speakers generally do not employ loanwords to expand their vocabulary to cover introduced material and cultural acquisitions. They either coin new words, mainly descriptive designations, or else extend the meanings of words already in the language. Keresan also borrows little, but, according to Spencer (1947: 133) it has "virtually no mechanisms by which to form new words" and so employs mainly the extension of the meaning of native words and loan translation to admit new items and concepts. (Dozier 1967: 393-4)

Borrowing has of course always taken place among North American languages. Central Alaskan Yup'ik words borrowed from neighboring languages are listed by Jacobson (1984: 688). Loans from Aleut include *arliaq* 'albatross' from *aĝligax̂*, *kalukaq* 'wooden bowl' from *kalukax̂* 'dish', *taangaq* 'liquor' from *taangax̂* 'water'. Yup'ik terms borrowed from Inupiaq to the north include *aakaq* 'mother' from *aaka*, *inuguaq* 'doll' from *inuk* 'person', *talir-* 'to Eskimo-dance' from *taliq-* 'to Eskimo-dance while sitting', and *umialek* 'rich man' from *umialik* 'boat captain, rich man'. Nater

1994 describes the extensive Athabaskan loans in Bella Coola Salish, and Loether 1997 the Yokuts and Miwok loans in Western Mono (Uto-Aztecan).

Loans are not always easy to detect, particularly after they have been in the language for a long time, or when they come from a closely related language. Kari 1977 describes such a situation involving two adjacent Athabaskan languages, Tanaina and Ahtna of southern Alaska. Four Tanaina dialect groups can be distinguished along Cook Inlet. The easternmost Tanaina dialect, termed Upper Inlet, is bordered to its east by the Ahtna language. Upper Inlet Tanaina shares many features with its neighbor Ahtna rather than the more closely related Lower Inlet Tanaina dialects. Of 66 terms for bird species, for example, Kari notes that 25 are shared exclusively between Upper Inlet and Ahtna. Thus the word for 'robin' is *six* in Upper Inlet and *suux* in Ahtna, but *kałnay* in Lower Inlet (Inland). Verb stems are notoriously more resistant to borrowing than nouns, especially in polysynthetic languages, but these languages show borrowed verbs as well. Of 601 verb stems recorded for both Tanaina and Ahtna, Kari found 34 shared exclusively by Upper Inlet and Ahtna. He notes that the borrowing reflects extensive cultural diffusion, including such terms as 'make potlatch', referring to a practice diffused from the Ahtna to the Tanaina.

Loans from North American languages into European languages have most often been terms for native artifacts, flora and fauna, and especially placenames. From the Algonquian languages, with which the English had the earliest contacts, come the most loans, including *moccasin*, *tomahawk*, *hominy*, *persimmon*, *opossum*, and *raccoon* from Virginia Algonquian, *wigwam*, *wampum*, and *skunk* from Abenaki, *caribou* from Micmac, *moose* and *sachem* from Narragansett, *totem* from Ojibwa, and *pecan*, *pemmican*, and *Mississippi* from Cree (Siebert 1975: 290-1). From Iroquoian languages come the placenames *Canada* (Laurentian *kaná:ta?* 'settlement'), *Schenectady* (Mohawk *skahnéhtati* 'beyond the pines'), *Ontario* (Huron *ontarí:io* 'great lake'), *Ohio* ('large creek'), *Kentucky* ('on the meadow'), and more. From Siouan languages come *tipi* (Lakhota *tʰípi* 'dwelling') and *Minnesota* (*mni-sota* 'water-clear').

European languages have left their mark on North American languages as well. Perhaps the earliest loans are two words of Basque origin still in use in Micmac, an Algonquian language of the Atlantic coast of Canada. These are Micmac *atlai* 'shirt' from Basque *atorra* and *elege* 'king' from Basque *errege*, itself a loan from Romance **rege* (Bakker 1989). They apparently came into Micmac through a Basque-Algonquian trade language used in the sixteenth century with Basque fishermen.

Dutch loans appear in Algonquian languages of the Northeast (Goddard 1974c, Bakker 1993) and in Mohawk, dating from the seventeenth-century Dutch colonization of the area. In Mahican, Bakker identifies *hámed* 'shirt' from Dutch *hemd*, *piǫn* 'violin' from *viool*, *pnàsch* 'bottle' from *fles*, *snup* 'snuff' from *snuif*, and *póschees* 'cat' from *poes* (1993: 32-3). Mohawk shows two: *kitkit* 'chicken' from Dutch *kip*, perhaps reduplicated as a call, and *takò:s* 'cat', from *de poes*. (Mohawk contains no labials.)

Loans from French appear in languages of Canada and Louisiana. Thus Mohawk, which shows relatively few loans, does have such nouns as *rakeréns* 'barn' from *la grange*, *rakarót* 'carrot' from *la carotte*, *timotón* 'sheep' from *des moutons*, *akarè:t* 'cake' from *la galette*. They typically include an article and show a distinctive word-final stress. (Mohawk stress is otherwise penultimate or antepenultimate.)

Languages throughout the Southwest and California show substantial borrowing from Spanish, extensively described in the literature. Among the many Spanish loans in Barbareño Chumash, of central coastal California, are *kamisa* 'shirt' from Spanish *camisa*, *lalanxa* 'orange' from *naranja*, *kučal* 'spoon' from *cuchara*, *liyos* 'God' from *Dios*, *lotol* 'doctor' from *doctor*, *wulewu* 'sheep' from *borrego*, *pospolo* 'match' from *fósforo*, *pali* 'priest' from *padre*, and *pilixolis* 'beans' from *frijoles*. Some words come from phrases, such as *akawayu* 'to be on horseback' from *a caballo*, and *alamisyon* 'mission' from *a la misión* (Madison Beeler p.c. 1986). The loanwords entered into native morphological formations, such as reduplication for pluralization, and prefixation to indicate possessors on nouns or subjects on verbs. Both appear in the phrase *his?aw?awux?a:?* *hilklapʰon* 'gramophone needles': *hi=s=?aw+?awux?a·?* DEPENDENT=its=REDUPLICATION+needle from Spanish *aguja* 'needle' (Harrington 59.116).

Russian loanwords are pervasive in Eskimo-Aleut languages of Alaska, particularly terms pertaining to religion and introduced material goods. Thus Yup'ik shows *kass'aq* 'white person, priest' from Russian *kazák* 'Cossack', *puusar-* 'to make the sign of the cross' from *bózhe* 'God (voc)', *papiq* 'beans' from *bóby*, *uil'kaq* 'fork' from *vílka*, *miilaq* 'soap' from *mýlo*, *apiataq* 'lunch' from *obéd*, *puukicaaq* 'button' from *púgovitsa*, *alulaq* 'rudder' from *rul'*, and *kuuniq* 'horse' from *kon'* (Jacobson 1984: 681-5).

Loans are not always direct. A word may be borrowed into one language, with reshaping appropriate to the phonological patterns of the borrowing language, then passed on to another in this new form. Prunet (1990: 485) notes that Carrier, an Athabaskan language of British Columbia, shows numerous loans from French, but *mʌsi* 'thank you' was clearly borrowed indirectly from French *merci* through Chinook Jargon *masi*, because direct borrowing should have led to Carrier **malsi* or **marsi*.

Layers of contact can frequently be seen. The French loans in Mohawk, the Spanish loans in Barbareño Chumash, and the Russian loans in Central Alaskan Yup'ik, all show reshaping in accord with the phonological patterns of the borrowing language. More recently, Mohawk, Barbareño and Yup'ik speakers have largely become bilingual in English. Use of English forms is often in the form of code-switching or code-mixing (within a sentence). Terms borrowed from English, however, generally show English phonology.

Many languages now show heavy influences throughout the grammar from European contact. Such influences in Central Pomo are described in Mithun 1990.

6.4.2 *Linguistic areas*

The existence of linguistic areas, regions in which languages have come to share substantial numbers of features due to longstanding contact among their speakers, has been observed since the beginning of the twentieth century (Dixon & Kroeber 1903, Boas 1917, 1929) and before. Recognition of the kinds of features that can be borrowed is crucial to the determination of genetic relationships, always a central concern in the history of study of North American languages. Sherzer (1973) undertook a survey of the distribution of certain phonological and morphological features over the entire continent in order to determine their correspondence to the culture areas delimited by Driver (1961). Cultural traits are of course more easily diffused than linguistic ones, which require more intensive contact and in many cases bilingualism. As the languages and their genetic relationships have become better known, further progress has been made in the study of linguistic areas. Shared traits are more easily identifiable as the result of contact when the languages sharing them are genetically unrelated, and the traits are otherwise rare cross-linguistically. A recent substantial survey of linguistic areas is in Campbell 1997.

Strong linguistic areas are typically characterized by large numbers of small linguistic communities on good social terms. Their members are in frequent contact and often become multilingual. The clearest linguistic areas in North America are the Northwest Coast, sections of California, the Southwest, and the Southeast. It should be noted that all languages in an area need not share all defining features of the area. Numerous factors enter into the relative borrowability of specific items, not only the nature of the potential loan but also existing linguistic and social characteristics of the borrowing language. Several other culture areas, such as the Plateau, the Great Basin, the Plains, the Northeast, and the Subarctic, show less evidence of linguistic convergence, because they are characterized by less linguistic diversity to begin with and because contact among groups has been less intense, and/or only recent.

The Northwest Coast

A large number of genetically unrelated languages are found on the Northwest Coast, including Eyak, Tlingit, Haida, the Tshimianic languages, the Wakashan languages, the Chimakuan languages, the Coast Salishan languages, Lower Chinook, Alsea, Siuslaw, Takelma, Kalapuya, Coos, and some Pacific Coast Athabaskan languages. A good discussion of areal features is in Thompson & Kinkade 1990: 42-4. Many of the characteristics uniting this area extend northward into the Athabaskan languages of the Subarctic, eastward into the Interior Salish languages, Kutenai and the Sahaptian languages of the Plateau, and southward into California.

The languages are characterized phonologically by a profusion of consonants, often with three stop series. All contain ejectives and make extensive use of glottal stop, often to mark aspect or diminutives. All but Takelma, Kalapuya, and Pacific Athabaskan distinguish (pre-)velars and uvulars (*k*/*q*). All but Haida oppose rounded and unrounded velars (*k*/*k*^{w}). Most have multiple laterals, at least *l*, *ɬ*, *ƛ*. Similarities are discussed in Boas 1899, 1911, 1920, 1929, Jacobs 1954, Haas 1969, Sherzer 1973.

Most of the languages are highly polysynthetic, showing many morphemes per word. They also exhibit complex morphophonemic patterns. Reduplication is extensive (except in Athabaskan-Eyak-Tlingit and Haida).

Several sub-areas, sharing additional traits, have been noted within the Northwest Coast linguistic area, many cutting across genetic boundaries. In the north, Haida shares certain features with Athabaskan-Eyak-Tlingit, such as the lack or near lack of labial consonants. Haida, Tlingit, and Eyak contain *ʌ* (as does Kwakwala). Haida has developed shape prefixes somewhat similar in function to the noun-classifying systems of Athabaskan-Eyak-Tlingit. It shares an agent/patient distinction in pronouns with Tlingit. All show basic verb-final order, unlike the languages to the south of them. Leer (1991) also notes lexical diffusion among Eyak, Tlingit, Haida, Tsimshian, and occasionally other Northwest Coast languages to the south.

Leer further proposes a special earlier contact area linking Aleut to the west with Eyak, Haida, and to a lesser degree Tlingit and Athabaskan, on the basis of parallel number marking and possessive constructions. Aleut shares the absence of labials with Eyak, Tlingit, Proto-Athabaskan, and marginally Haida, and the verb-final word order (like its Eskimoan relatives). The other Coast languages show predicate-initial order. Leer hypothesizes that the earlier contact area was split by the intrusion of Tlingit, which shares some of the traits, and the Eskimoan Alutiiq, which shares none.

Thompson & Kinkade (1990: 44) note a number of other features that have spread across genetic boundaries within the Northwest Coast area. Distinctive tone has developed in Haida, Tlingit, the Bella Bella dialect Heiltsuk, and Takelma and is incipient in Quileute and Upriver Halkomelem, generally arising from glottal constriction. Interdental *θ* and *θ̓* have developed in Halkomelem, Saanich, and some Comox dialects. Velars have been fronted in Eyak, Tlingit, Haida, the Tshimshianic languages Nass-Gitksan and Coast Tsimshian, the Northern Wakashan languages Haisla, Heiltsuk, Kwakwala, and probably Nootka and Nitinat, and the northern Coast Salish langauges Bella Coola, Halkomelem, Sechelt, and Lushootseed.

Lexical affixes, with meanings typical of roots in other languages ('hand', 'catch'), appear in profusion in the Salishan, Wakashan, and Chemakuan languages, and to a lesser extent in Tsimshianic languages. The Salishan, Wakashan, and Chimakuan languages show little differentiation between nouns and verbs. These features earlier led to the hypothesis of a deeper genetic relationship among them in a 'Mosan' stock.

Pharyngeals, which are quite rare cross-linguistically, appear in several unrelated languages of the Northwest: Coast Tsimshian, Northern Haida, Nootka and Nitinat

(Southern Wakashan), and to the east, the Interior Salishan languages and Chilcotin (Athabaskan). It is interesting that though these families are adjacent, the languages containing the pharyngeals are not. The pharyngeals are described in section 1.1.

The shared lack of a feature is usually less indicative of contact than a shared presence, unless the gap is rare and, even better, can be seen to be the result of a loss. Nasals are lacking in the Salishan languages Twana and Lushootseed, the Chimakuan language Quileute, and the Wakashan languages Nitinat and Makah, though they are present in languages closely related to all of these. The gaps were caused by a shift of nasals to voiced stops, **b* and **d*, apparently stimulated by an area-wide tendency to pronounce nasals with only partial velic closure. Kinkade (1985) notes that in the Salishan languages Comox, Sechelt, Clallam, and two Halkomelem dialects, as well as Lower Chinook, this tendency could still be seen in recent times.

As will be seen, many Northwest features extend eastward into the Plateau region.

California

Like the Northwest, California shows great genetic diversity, with over 20 families represented. Many of the languages have always been spoken by small communities, so there has been a long history of contact, multilingualism, and intermarriage. Particularly in this area it has been difficult to distinguish with certainty commonalities due to ancient genetic relationships from those due to ancient contact.

One of the earliest linguistic areas to be recognized was Northern California, which also shares a number of Northwest Coast traits. Haas 1976 outlines similarities in phonetic traits, consonant symbolism, diminutives, numeral systems, and pronoun sets. Three series of stops are common: plain, aspirated, and ejective. They appear in Klamath, Chimariko, Yana, the Athabaskan languages (Tolowa, Mattole, Hupa, Kato), the Wintun languages, the Pomoan languages, Lake Miwok, and a number of languages to the south, including the Chumashan languages. Other Northwest traits include a velar/uvular contrast in Klamath, Wintu, Chimariko, Pomoan, and further south; multiple laterals in the Athabaskan languages, in the Algic languages Yurok and Wiyot, in Wintun, Lake Miwok, and languages further south.

Often mentioned as typical of this area but not of the Northwest Coast are retroflex stops, but surveys have sometimes misinterpreted the symbols used in transcriptions (particularly *ṭ*). The symbols *ṭ*, *ṭ̓*, and *ṭʰ* have generally been used simply to represent a point of articulation further back than *t*, *t̓*, and *tʰ*, marking a dental/alveolar distinction in some languages, particularly those of the north, and retroflexion in others, particularly in the south. A careful survey of the phenomenon is in Langdon & Silver 1984. Haas also points out that distinctive voiced stops appear in a narrow east-west strip of languages including Pomoan, Wintun, Lake Miwok, and Maidu. She concludes that 'most languages of the area bear more resemblance to their adjacent unrelated neighbors than they do to their congeners' (1976: 353). Yurok has ejectives and Wiyot has aspirated stops, for example, though their Algonquian relatives outside of the area show neither.

Within Northern California is a small linguistic area around Clear Lake, approximately 100 miles north of San Francisco, in which members of four different families are in contact: Utian (Miwok-Costanoan), Wintun, Wappo (isolate), and Pomoan. Callaghan (1964, 1987a) reports that the Lake Miwok language differs strikingly in its phonological inventory from its relatives. Where the other Miwok languages contain just one series of stops, Lake Miwok has plain, aspirated, ejective, and voiced stops. It has also added the affricates *č*, *č̓*, *c̓*, *ƛ̓* and liquids *r*, *ɬ*. Callaghan shows that at least 30 percent (78 of 260) of the words containing these sounds are loans from surrounding languages. Thus Lake Miwok *búkʰal* 'fishtrap' can be traced to Southwestern Pomo *buhqʰal* 'burden basket'; *c̓ée* 'angleworm' to Hill Patwin (Wintun) *c̓e·* 'fish worm'; *k̓éni* 'large storage basket' to Patwin (Wintun) *k̓eni?* 'plate basket'; *p̓ócci* 'woman' to Nomlaki (Wintun); *ɬ̓éele* 'to slice meat' to Hill Patwin *ɬ̓ella?* 'to slice' or Eastern Wappo *ɬ̓el* 'to cut open'; Lake Miwok *p̓út-kaṭi* 'to kiss' to Southeastern Pomo *p̓úṭki* (Western Wappo *púc̓-*); *pʰüc̓-* 'to crush, pinch' to Eastern Pomo *pʰi·cʰá·y* 'cut'.

Certain traits have been observed to extend over genetically unrelated languages in Southern California, an area termed by Campbell the Greater South Coast Range (1997: 336). It includes Esselen, Salinan, and languages of the Chumashan, Yokutsan, and northern Uto-Aztecan families. Campbell cites shared sounds *h*, *i̯*, *c*, and *ŋ*, though not all occur in all of the languages. Ono, Wash, & Mithun 1991 describe a final glottalization process that serves as an intensifier and marker of imperatives in Chumashan, Yokutsan, Uto-Aztecan, and Yuman languages. Hinton 1991 shows that the Cupan languages of the Uto-Aztecan family have evolved to resemble their California Yuman neighbors phonologically. The shifts were not stimulated by any of the modern Yuman languages, but by a Yuman substratum that was replaced by the Cupan languages. Yuman, Chumashan, Esselen, and Salinan share a velar/uvular *k*/*q* distinction and the segments *č* and *x*. These features are not reconstructed for Proto-Uto-Aztecan, but they do appear in Cupan. Other traits not appearing in Chumashan, Esselen, Salinan, or Proto-Uto-Aztecan are shared by the Yuman and Cupan languages: the distinctions *kʷ*/*qʷ*, *s*/*ś*, and *r*/*l*, the segments *xʷ*, *ñ*, *lʸ*, a small vowel inventory, and consonantal sound symbolism.

The Pueblo Southwest

The Pueblo Southwest constitutes a clear culture area, and there is evidence of linguistic diffusion as well. Five genetically distinct language groups are represented: the Tanoan languages (Kiowa-Tanoan family), Zuni, Keresan, Hopi (Uto-Aztecan family), and the more recently arrived Apachean languages (Athabaskan family). Of these, the Tanoan languages, Hopi, and the Apachean languages have relatives outside of the area, which aids in the identification of innovations due to contact. Sherzer 1973 lists a number of features shared by most or all of the languages. The more significant similarities include the devoicing of final vowels and sonorants in Zuni, Keresan, and Hopi; tone in Tanoan, Keresan, and Apachean; the labio-velar *k*^{w} in Tanoan, Zuni, Hopi, and Navajo; a pronominal dual in Tanoan, Zuni, Keresan, and Apachean; plural marking by nominal suffix in Tanoan, Zuni, Keresan, and Hopi; and noun incorporation in Tanoan, Zuni, Keresan, and Hopi. It is not possible to demonstrate that the devoicing, tone, and incorporation are the result of contact, since they can be reconstructed for the parent languages in each case. Sherzer proposes, however, that the Navajo *k*^{w} was borrowed from Pueblo neighbors and suggests that Navajo rounded *h*^{w} might be borrowed from Tanoan and Navajo glottalized sonorants from Keresan. A new *r* in Tewa and Tiwa dialects and Hopi could have been borrowed from Keresan. Shaul 1982 notes that Tanoan, Zuni, Keresan, and Apachean all show glottalized consonants, but that in Zuni, there is only a partial series of low frequency, suggesting that they are the result of diffusion from the neighboring Tanoan and Keresan. He identifies some possible sources for words containing them, such as Zuni *ǩaš:i-* 'fish' from Santa Ana Keresan *sǩàšɬ* 'fish'. Bereznak 1995 examines the evidence for a Pueblo linguistic area in detail.

In the area of grammar, Gorbet 1977 proposes that headless relative clauses constitute a syntactic areal feature. They appear in at least Tanoan, Hopi, and Apachean. (Data on Zuni and Keresan were unavailable to Gorbet at the time.) While headless relatives can be reconstructed for Proto-Tanoan, they appear to be innovations in Hopi and perhaps Apachean. Kroskrity has identified grammatical traits in Arizona Tewa that have apparently come from Apachean, including passive and relative clause constructions and a possessive morpheme (1982, 1985a,b, 1993).

White 1944 describes ceremonial vocabulary among the Pueblo languages, showing that many of the special terms used in prayers and songs have been borrowed across language boundaries.

The Southeast

The Southeast has long been recognized as a major culture and linguistic area. The core languages of the area are those of the Muskogean family; Ofo and Biloxi of the Siouan family; and isolates Chitimacha, Atakapa, Tunica, Natchez (grouped together as 'Gulf') and Yuchi. Somewhat more peripheral languages include Cherokee and Tuscarora (Iroquoian); Caddo (Caddoan); Tutelo, Catawba, and the Dhegiha languages Omaha-Ponca, Kansa-Osage, and Quapaw (Siouan); Powhatan, Nanticoke, Pamlico, and Shawnee (Algonquian); and isolates Karankawa and Tonkawa. Of these, the Siouan, Iroquoian, Caddoan, and Algonquian languages have relatives outside the area. Other groups are known to have resided in the Southeast, but their languages are unattested. In addition, various lingua francas were used throughout the region, particularly Mobilian Jargon. A bibliography of languages of the Southeast is in Booker 1991. Discussion of the Southeast as a linguistic area is in Rankin 1986, 1988, Nicklas 1994, and Campbell 1997: 342-3.

Among the phonological features that recur in the Southeast are bilabial fricatives, which appear in all of the Muskogean languages, in Yuchi, Ofo, and Tuscarora; fricative *ɬ* in Muskogean, Timucua, Atakapa, Natchez, Yuchi, and Cherokee; and retroflex sibilants in Creek, Hitchiti, Mikasuki, Alabama, Natchez, Tunica, Quapaw, and Mobilian Jargon (Rankin 1988).

Extensive use of positional verbs 'sit', 'stand', and 'lie' can be seen in the Muskogean languages; in the Gulf languages Tunica, Atakapa, and Chitimacha; in Caddo; and in the Siouan language Biloxi (Watkins 1976, Rankin 1988). (Information on Natchez, Ofo, Catawba, and Tonkawa is insufficient for identifying such patterns.) The positional verbs are used for specifying location as in (1)a and, in some languages, to predicate possession. They are also used as auxiliaries, as in (1)b.

(1) CHOCTAW POSITIONALS — Watkins 1976: 21

a. *asean* *spaaskat* *ahwiilɬiis*
there broom.NOMINATIVE stand
'The broom is over there.'

b. *iklah* *nosiš* *iikahmaaya*
we sleep lie.PLURAL
'We're sleeping.'

The verbs serve indirectly to classify objects, with the use of 'stand' for vertical objects, 'sit' for rounded or compact objects, and 'lie' for horizontal objects. They typically distinguish number as well, with distinct positional verbs for singulars, plurals, and sometimes duals. Some of the languages, particularly Yuchi, Chitimacha, and the

Dhegiha branch of Siouan, distinguish the position of objects in demonstratives and articles, some or all of which evolved from positional verbs. It appears that the system originated in Siouan and spread to other languages in the Southeast. Cherokee has developed a somewhat similar classificatory system from another diachronic source, noun incorporation. (Positionals are further discussed in section 3.4.2.)

Pronominal affixes on verbs show an agent/patient case distinction throughout most families with languages in the Southeast, including Muskogean, Siouan, Caddoan, and Iroquoian, as well as in Chitimacha and Natchez.

Borrowing can be seen among individual languages in the area as well. Rankin 1988 notes, for example, that Koasati (Muskogean) borrowed a distributive suffix for numerals *-na:nan* from Quapaw (Siouan) *-na:na:*, and Choctaw-Chickasaw borrowed an ordinal suffix for numbers *-hi* from Quapaw *-hi*. Crawford 1988 reports that Hitchiti (Muskogean) borrowed a negative suffix *-ti* for verbs from a Timucua suffix with the same shape and function.

Other linguistic areas

The possibility of several additional linguistic areas in North America has been explored, particularly in areas with evidence of extensive cultural interaction.

The Plateau, a recognized culture area, covers the region east of the Northwest Coast, encompassing modern western British Columbia, western Washington, northwestern Oregon, northern Idaho, and western Montana. Languages of the area include Kutenai, Nicola Athabaskan, the Interior Salish languages, the Sahaptian languages (Nez Perce, Sahaptin), Cayuse, Upper Chinook, Molala, and Klamath-Modoc. These languages do share many features, but these features are also generally shared by languages of the Northwest Coast, suggesting that the Plateau is simply an extension of that area. The features include large consonant inventories, with labio-velars (k^w), velar fricatives (x), uvulars (q), ejectives, glottalized sonorants, and multiple laterals, as well as complex consonant clusters (Jacobs 1954, Haas 1969b, Sherzer 1973). Diminutive sound symbolism also extends through this area, as do special forms of speech for myth figures. Aoki 1975 reports that a quinary-decimal numeral system was diffused among the languages of Oregon, Washington, and Idaho, and that the kinship system of modern Interior Salish and Sahaptian speakers also appears to be the result of diffusion. Both Interior Salishan languages and Nez Perce show vowel harmony, though it is of different types. Upper Chinook dialects share certain traits with their neighbors that differ from those of their Lower Chinook relatives, particularly gender distinctions in pronouns; possessive, instrumental, and locative case suffixes on nouns; cislocative and translocative directional prefixes on verbs; and the development of tense markers from aspect (Silverstein 1974).

The Great Basin constitutes a culture area extending over present eastern Oregon, southern Idaho, western Wyoming, western Colorada, Utah, Nevada, and eastern California. It shows little linguistic diversity, however, containing languages of only two families: the Numic branch of Uto-Aztecan and Washo. Most shared linguistic traits are common to languages of the Northern California linguistic area as well, and Washo, on the western edge of the area, shares a number of traits with Northern California languages that are not found in Numic (Jacobsen 1986b). Features diffused over the larger area include kinship terminology, reduplication, instrumental (manner) verbal prefixes, an inclusive/exclusive distinction in pronouns (Jacobsen 1980a), and switch-reference (Jacobsen 1986b).

The Plains can be identified as a relatively recent culture area; most inhabitants have moved there within the past two centuries. Taken in the widest sense, the area encompasses languages the Siouan, Caddoan, Algonquian, Athabaskan, Kiowa-Tanoan, and Uto-Aztecan families. The area is sometimes divided into two, the Plains and the Prairies. Many of the traits shared by languages in these areas can be seen to be inherited from their ancestors, and many are quite common cross-linguistically. Hollow & Parks 1980 list some features that can be seen to be the result of diffusion. Consonant symbolism involving spirants, which is reconstructed for Proto-Siouan, has developed in Arikara, a Caddoan language: *kunahúx* 'old man', *kunahús* 'little old man'. Additional diffused traits include vowel devoicing in Arikara (Caddoan), Cheyenne (Algonquian), Comanche (Uto-Aztecan), and Fort Belknap Assiniboin (Siouan); sex differentiation of speaker in Dakota (Siouan) and Arikara (Caddoan); the use of distinct sibling terms according to the sex of ego in Siouan and Caddoan; and strikingly restricted consonant inventories. Hollow and Parks note that 'Arikara, like other Caddoan languages, has very few consonant types; while Mandan, Hidatsa, and Crow have strikingly fewer consonants than their Siouan-speaking neighbors to the south' (1980: 82).

Finally, the Northeast culture area shows little linguistic diversity, containing Eastern Algonquian languages, Northern Iroquoian languages, and perhaps Winnebago of the Siouan family. The languages show comparatively little evidence of contact, probably due to the fact that there appears to have been relatively little bilingualism across family boundaries. Goddard (1965, 1971a) notes that the innovation of a nasalized vowel *ǫ* in Eastern Algonquian languages may have been stimulated by the presence of nasalized vowels in Northern Iroquoian languages.

6.4.3 *Contact languages*

Given the number of different languages spoken over the continent, it is not surprising that means should have developed for communication across linguistic boundaries. The existence of several kinds of contact languages is attested.

In many areas the language of a prestigious nation was learned as a second tongue by other groups and used as a lingua franca. In the Southeast, Occaneeche, an unattested language reportedly understood by the Siouan Tutelo, was said to be used for intertribal communication in Virginia (Beverley 1705: 3.24 cited in Crawford 1978: 5). (This may have been a pidgin, perhaps the same as that known as Saponey.) Tuscarora, an Iroquois language, was used in present North Carolina (Lawson 1709: 225). Catawba, a Siouan language, was used in South Carolina (James Adair 1775: 267 cited in Crawford 1978: 6). Creek, a Muskogean language, was spoken by member nations of the Creek Confederacy (Crawford 1978: 6-7).

Along the Mississippi River between the Arkansas and Ohio Rivers, Illinois (Peoria), an Algonquian language, was observed in use as a lingua franca by French explorers during the seventeenth century (Taylor 1981: 178, Silverstein 1996: 120).

In the Great Lakes region, several Central Algonquian languages were used as lingua francas through the nineteenth century. Rhodes 1981 provides evidence of four trading networks between 1830 and 1880. For trade in the eastern part of the region, east of Georgian Bay, Eastern Ojibwa was used. In the south between Lake Erie and Lake Huron, along the lower peninsula and the eastern end of the upper peninsula of Michigan, on Manitoulin Island, the north shore of Georgian Bay, and nearby islands, it was Ottawa. To the west, in the western upper peninsula of Michigan, through northern Wisconsin, and on to the Mississippi River, it was Southwestern Ojibwa. North of the lakes, a dialect of Cree, perhaps Plains Cree, was used (Bakker 1996a). Many groups using Algonquian lingua francas spoke Algonquian languages themselves, but some spoke Siouan languages, such as the Winnebago and Lakhota. Cree was also used further north, by the Athabaskan Chipewyan, Beaver, and Sarsi.

Further west, several Siouan languages were used as lingua francas (Taylor 1981: 179). The Assiniboine, a Dakotan group on the Canadian Prairies, served as middlemen between the Hudson Bay Company and people to the west, and their language was used by Cree and Mandan-speaking peoples. Lakhota, the language of the Teton Sioux on the northern Plains, was apparently widely known there.

On the southern Plains, Comanche, a Uto-Aztecan language, was used as a lingua franca during the nineteenth century. In the Southwest, Navajo, an Athabaskan language, was used by the Uto-Aztecan-speaking Hopi with the Navajo and the Zuni.

In California, many communities were quite small, so exogamy and multilingualism were the norm. Nevertheless, Hupa apparently functioned as a lingua franca in northern California (Taylor 1981: 179).

It is not always possible to distinguish early descriptions of lingua francas from communication among people speaking closely related languages. Furthermore, the lingua francas were not always equivalent to the full native forms of the languages. Describing the use of Cree by the Athabaskan Sarsi, Coues remarked that 'most of them have a smattering of the Cree language, which they display in clamorous and discordant strains, without rule or reason' (1897: 2.737, cited in Taylor 1981: 179).

Contact situations have often given rise to special kinds of languages. Visitors to an area may be spoken to in 'foreigner talk', a grammatically and lexically simplified form of the language deemed easier for foreigners. In fact some of the earliest records of North American languages probably represent such foreigner talk. Goddard notes, for example, that the vocabulary of Virginia Algonquian recorded by Captain John Smith and published in 1612 'lacks the inflections and syntactic complexities of a true Algonquian language' (1996: 18).

Visitors in contact situations may of course use imperfect versions of the local language, due to incomplete learning. Goddard points to the language of the (Algonquian) Quiripi Catechism, written in the seventeenth century by Abraham Pierson, minister of the church in Branford, Connecticut: 'Although this uses some correct inflectional forms, such as simple plurals, the words are strung together in unidiomatic constructions' (1996: 19). Of interest here is 'Trader Navajo', used by English-speaking white traders on the Navajo reservation (Werner 1963, Voegelin, Voegelin & Schutz 1967: 441-4). Werner found that it was used only by the traders in transactions with Navajos; Navajo speakers responded in Navajo or English. The Trader Navajo used by each trader was different, apart from certain core similarities, but it never approached native proficiency in Navajo. In his comparison of four traders, Werner found that the best speaker controlled a Navajo-based vocabulary of about 500 items. As would be expected, verbs, which in Navajo exhibit complex fusional morphology, generally appear in invariant stem forms.

In brief encounters a jargon may be used by all parties, a spontaneous means of communication with limited vocabulary and grammar. With repeated contact, jargons may evolve into pidgins, systems that become conventionalized and must be learned as a second language. Jargons and pidgins thus defined are not always easy to distinguish, since the first can evolve gradually into the second. Technically, pidgins are not immediately intelligible to speakers of the languages on which they are based. (Pidgins learned by children as a mother tongue are termed 'creoles'.)

The use of jargons and pidgins has been reported in several areas of North America, though documentation of them is scarce. A Basque-Algonquian pidgin, also called Souriquois, was used by Basque fishermen along the Atlantic coast from about present Portland, Maine to Newfoundland and Labrador, as they traded with the Micmac, the Montagnais, and probably others. It was in use from at least 1580 until

1635 (Bakker 1989a, Bakker & Grant 1996). Bakker (1989a: 139) provides some 30 attested words and phrases, such as that in (1). He identifies the first word *ania* as Basque in origin, the second *capitana* as a Romance loan in Basque (with Basque ending *-a*), and the third and fourth words as coming from Montagnais.

(1) BASQUE-ALGONQUIAN PIDGIN — Le Jeune in Thwaites 1896-1901: 5.61

ania	*capitana*	*ouias*	*amiscou*
Basque *anaia*	Basque *kapitaina*	Mont. *wiya:s*	Mont. *amisku*
brother	captain	meat	beaver

'Mon frère le Capitaine, nous t'apporterons la chair d'un castor'
= 'Captain, my brother, we bring you beaver meat' — Bakker 1989: 139

Several other Algonquian-based pidgins have been reported, including a pidgin Massachusett in New England (Goddard 1977) and Delaware Jargon, on the Middle Atlantic Coast (described in Chapter 7). A pidgin based on the Algonquian language Ojibwa, known as Broken Oghibbeway, was used around the Great Lakes by various Central Algonquian groups (Ojibwa, Menominee, Potawatomi, Sauk and Fox) and white traders (Nichols 1992, 1995, Bakker 1994a).

In the Southeast, early documents suggest the existence of an Apalachee-Spanish pidgin composed of the Muskogean languages Apalachee and Alabama, and Spanish, in use before 1710, though there is little attestation of it (Silverstein 1996: 124). Better known is the Muskogean-based Mobilian Jargon, described in the catalogue.

Trade languages based on Inuktitut (Eskimo) were reportedly used from the coast of Labrador, north to Greenland, west across the Arctic, and south along the west coast of Alaska to Kotzebue Sound. These are described under **Inuktitut (Eskimoan) Trade Languages** in the catalogue.

Two similar Athabaskan trade languages were used in the north: Jargon Loucheux along the Yukon River, and Broken Slavey or Slavey Jargon in the Mackenzie River region. They were reportedly spoken by Athabaskans (Gwich'in, Slave, and Chipewyan), Algonquians (Cree), Inuit, and European traders. Slobodin (1981: 529) notes that Broken Slavey was obsolete among the Gwich'in by the 1930s. The French missionary Emile Petitot characterized the two as follows.

> The Loucheux Pidgin [Jargon Loucheux], used in the Yukon and among the Dindjié of Peel River, is made up of scraps of French, English, Chipewyan, Slavé, Dindjié [Gwich'in, Loucheux], and even Cree vocabularies. It is not used in the Mackenzie, where Broken Slavey [le jargon esclave] predominates. The latter comprises only French, Cree, and Dené Slave elements. (Petitot 1889: 292-3, cited and translated by Bakker 1996c: 317)

Petitot provides the sample in (2), spoken by a Chipewyan to a Gwich'in. Words based on Athabaskan are in boldface italic, and material from French in plain italic.

(2) BROKEN SLAVEY — Petitot 1889: 292 in Bakker 1996c: 319

Allons	*Rakpé*	*l'a dit:*	*ey*	***dindjié,***
Let's go	the chief	said:	This	man

il faut	*le f. . . [foutre]*	*à*	*l'eau,*	*le*	*chien*	*kkétincho*
we have to	throw him	into	the water,	the	dog	

Notre Pére, le Révérand M . . .	*n'est pas*	*loin*	*d'ici.*	*Ey bettaoderha illè.*
our father the Reverend M . . .	is not	far	away.	This one is not needed.

Allons,	*vous autres,*	***djugu,***	*c'est le moment.*	*Anl'a*	*nipaâ*
Let's go,	you guys,		this is the moment.	Let's kill him	all together.

A Haida-English jargon was said to be used on the northern British Columbia coast for fur trade among the Haida, Tsimshian, Heiltsuk and Europeans. William Fraser Tolmie and Alexander Anderson, who were both at Fort McLoughlin on Milbanke Sound around 1834, mentioned it in letters (Bakker & Grant 1996), but it was apparently gone by 1879. There may have been a pidginized form of Nootka on the Northwest coast in the late eighteenth and early nineteenth centuries (Samarin 1988), but attestation is limited. Both were probably replaced by Chinook Jargon, spoken over a wide area of the Northwest Coast. Chinook Jargon is described in the Catalogue.

The arrival of European immigrants has had a heavy impact on the languages indigenous to North America. Layers of French loans can be seen in languages of the North, Northeast, and Louisiana; of Spanish in the Southwest and California; of Russian in Alaska; and of English elsewhere on the continent. Distinctive forms of the European languages ultimately developed in local communities, showing substratum influences from the traditional languages, and some of these features persist today. Early examples of American Indian pidgin English are in Leechman & Hall 1955 and Goddard 1977. A larger work on American Indian English is Leap 1993.

Contact with European languages has resulted in two languages of special interest: Mednyj Aleut and Michif. Both came to be learned as mother tongues, but neither followed the familiar path of evolution from a trade jargon to a conventionalized pidgin to a creole. They were apparently created by fully fluent bilinguals as a symbol of their unique ethnic identities. In each case, components of two source languages were combined, neither showing the lexical or grammatical simplification typical of other contact languages. Both of these are described in the Catalogue as well.

Catalogue

The following catalogue lists attested languages indigenous to North America, arranged alphabetically by family, followed by contact languages. Those marked with an asterisk* are no longer spoken. **FAMILIES** are listed in bold caps, SUBGROUPS in small caps, **languages** in boldface, and *dialects* in italics. At the end of the catalogue are maps of tribal territories at the time of contact.

7.1 Language families and isolates

Adai = Adaizan = Adaizi = Adaise = Adahi = Adaes = Adees*

The Adai first encountered Europeans in eastern Louisiana. They were mentioned as Atayos about 1530 by Cabeca de Vaca in his 'Naufragios', and again by French explorers. In 1715 the Spanish established the Mission of Adayes near them about 40 miles west of Natchitoches on Lac Macdon. In 1792 14 families moved to southwest Texas 'where apparently they amalgamated with the surrounding Indian population and were lost sight of' (Powell 1891: 122 from Gatschet 1886). About 100 people remained in Louisiana at the turn of the century, but by 1820 there were only 30.

The Adai language is known only from a list of 275 words recorded around 1804 by John Sibley, the first Indian Agent of the United States. The list was subsequently lost, but a copy is in the American Philosophical Society Library. Vocabulary from it has been published in Adelung & Vater 1806-17: 3.2.278, Gallatin 1836 (with errors) and Taylor 1963: 114. Sibley noted that the language 'differs from all others, and is so difficult to speak or understand that no nation can speak ten words of it' (Powell 1891: 122). Probably because of their proximity to the Caddo, Gatschet compared the Adai words to Caddo counterparts and noted similarities. His suggestion of a possible link was picked up by several, but Powell found the resemblances insufficient to establish genetic relationship, and subsequent work now that Caddo is better known indicates that a relationship is unlikely (Wallace Chafe p.c. 1998).

ALGIC FAMILY

ALGONQUIAN = ALGONKIAN

EASTERN ALGONQUIAN

Micmac = Mi'kmag = Mi'kmaw

Maliseet (= Malecite)-Passamaquoddy

Etchemin*

Eastern Abenaki: *Penobscot=Old Town, Caniba*, Aroosagunticook* Pigwacket**

Western Abenaki = Abnaki = St. Francis

Loup A* (= Nipmuck?)

Loup B*

Massachusett = Natick*: *North Shore, Natick, Wampanoag, Nauset, Cowesit*

Narragansett*

Mohegan-Pequot*: *Mohegan, Pequot, Niantic, Montauk*

Quiripi (= Quinnipiak = Connecticut)-Naugatuck-Unquachog-Shinnecock*

Mahican*: *Stockbridge, Moravian*

Munsee = Delaware: *Munsee, Wappinger*

Unami = Delaware = Lenape: *Northern**, *Southern, Unalachtigo**

Nanticoke*: *Nantikoke, Choptank, Piscataway = Conoy*

Powhatan = Virginia Algonquian*

Pamlico = Carolina Algonquian = Pamtico = Pampticough*

CENTRAL AND PLAINS ALGONQUIAN

Shawnee

Fox (= Mesquakie)-Sauk-Kickapoo

Miami-Illinois = Peoria*

Potawatomi

Ojibwa = Ojibway = Ojibwe = Chippeway: *Saulteaux, Northwestern Ojibwa, Southwestern Ojibwa, Severn Ojibwa, Central Ojibwa, Ottawa = Odawa, Eastern Ojibwa, Algonquin*

Cree: Eastern Cree dialects *East Cree, Naskapi, Montagnais = Innu-aimun*; Western Cree dialects *Plains Cree, Woods Cree, Western Cree, Swampy Cree, Eastern Swampy Cree, Moose Cree, At(t)ikamek(w) = Tête de Boule; Mi(t)chif*

Menominee = Menomini

Cheyenne: *Cheyenne, Sutaio = So?taa?e**

Arapaho-Atsina: *Arapaho, Besawunena**, *Gros Ventre = Atsina = Aáni, Nawathinehena**, *Ha?anahawunena**

Blackfoot

RITWAN

Wiyot = Wishosk*

Yurok = Weitspekan

The Algic family covers the widest territory of all North American families. Algonquian languages stretch from Labrador south into present North Carolina and west across the Plains into Alberta and Montana; Wiyot and Yurok are in California.

There is a significant depth of scholarship on the Algonquian languages, because they were the first with which Europeans had prolonged contact, because they are numerous, and because several are still thriving. Missionaries were producing detailed documentation as early as the 17th century. Guides to sources are Hanzeli 1969 for 17th and 18th century missionary materials, Pilling 1891 for material from 1609-1891, Pentland and Wolfart 1982 for material from 1891-1981, the *Algonquian and Iroquoian Newsletter*, and *HNAI* 15. The Proceedings of the Algonquian Conferences are a rich source of information, and *Man in the Northeast* contains articles on Algonquian languages as well. Only a portion of the wealth of material that exists can be mentioned here. Overviews of the family are in Teeter 1973 and Goddard 1992.

Genetic relationships among Algonquian languages were recognized early. Good surveys of comparative work are in Goddard 1979 and 1990c. In 1925 Bloomfield reconstructed the phonology of Proto-Algonquian on the basis of Fox, Ojibwa, Cree, and Menominee. His reconstruction of the morphology appeared in 1946. Siebert 1967 reconstructs the homeland of the Proto-Algonquian people, and Aubin 1975 contains a Proto-Algonquian dictionary. Progress continues as details are worked out.

Eastern Algonquian

Within Algonquian, the Eastern languages are generally considered to constitute a genetic subgroup (Goddard 1967, 1974a, 1979a, 1980, 1983). Goddard 1978a provides a good overview of the languages in this branch. The precise number of distinct languages spoken at contact and their interrelationships are difficult to establish with certainty for several reasons. Many have disappeared. Attestation of some is limited to short wordlists, some showing internal dialect variation. Languages of many groups mentioned in early accounts were never documented at all. There was also continued contact among groups. Early authors differ in their appraisals of mutual intelligibility; some emphasize similarities, others differences.

The northernmost and most divergent of the Eastern languages is Micmac or Mi'kmag, spoken by 8,100 (SIL 1996) in the Canadian maritime provinces (Nova Scotia, Prince Edward Island, eastern New Brunswick), the Gaspé of Quebec, Labrador, and now Boston. Some children are still learning the language. There is dialect diversity among communities and age groups, with the greatest differences setting off the Restigouche community in Quebec. Major published documentation includes reference grammars (Maillard 1864, Pacifique 1938 in Hewson & Francis 1990), a teaching grammar (Delisle & Metallic 1976), dictionaries (Rand 1888, 1902, DeBlois & Metallic 1984), and texts (DeBlois 1991). Rand published a newspaper in the language, *The Micmac Messenger*, for 17 years. Fidelholtz 1968 contains a discussion of phonology with short dictionary, and Fidelholtz 1978 and Proulx 1978 verb morphology. The development of native writing systems is traced in Battiste 1984.

Maliseet-Passamaquoddy is a single language with little variation, spoken in western New Brunswick by the Maliseet and in eastern Maine by the Passamaquoddy. There are around 1000 fluent speakers, the youngest in their 30s (Karl Teeter p.c. 1992). Early work beyond vocabulary includes description of morphology in Prince 1914 and texts in Prince 1909 and 1921. Grammatical sketches are in Teeter 1967, 1971 and Leavitt 1996, and a description of verb morphology in Sherwood 1986. A dictionary is in LeSourd 1984, discussion of accent and syllable structure in LeSourd 1989, and verbs of possession in Sherwood 1983.

Etchemin is known only from a list of the numbers 1-10 obtained in 1609 by Lescarbot from speakers living between the Kennebec and St. John Rivers (1914: 113-27). Other material labeled Etchemin is from other Eastern Algonquian languages, principally Maliseet-Passamaquoddy and Eastern Abenaki.

Eastern Abenaki was centered in central and western Maine. The last speaker of the Old Town Penobscot dialect, Madeline Tower Shay, died in 1993 (Frank Siebert p.c.). Other dialects included Caniba, spoken along the Kennebec and probably by the Wawenock at the Bécancour mission. There is a 540-page manuscript dictionary by Aubery dated 1715. Major published sources include a 17th-century Caniba dictionary by Râle (1833), 19th century liturgical materials (Vetromile 1856, Trumbull 1873), grammatical descriptions (O'Brien 1887, Prince 1910, Voorhis 1979, 1982), texts (Speck 1918, 1928a), and notes on Penobscot suprasegmentals (Siebert 1988).

Western Abenaki is known mainly from 19th and 20th century material recorded at Odanak (St. Francis), Québec. The village was established as a mission in the 17th century for groups from Massachusetts, Vermont, and New Hampshire, particularly the Sokoki. Day (1985) notes that four dialects can be distinguished dating from at least the mid-19th century. A handful of elderly speakers remain (Nancy Caplow p.c. 1998). The language differs phonologically, grammatically, and lexically from Eastern Abenaki (Prince 1902a, Day 1978). A bibliography is in Day 1961. Among sources cited are works by speakers, with primers and liturgical materials, and grammatical discussions (Prince 1901), vocabulary, and texts (Laurent 1884, Masta 1932). Other sources include a sizable vocabulary (Day 1964), a two-volume dictionary (Day 1994), and a text with free translation (Speck 1945).

The name *Loup* (French 'wolf') was applied to several Algonquian groups by the French (Day 1975). Two languages, attested only in wordlists identified by no other names, are now referred to as Loup A and Loup B. Loup A appears in an undated 124-page manuscript in the hand of Father Jean-Claude Mathevet, a Sulpician in Canada from 1740 to 1781, and published in facsimile with meticulous decipherment,

index of words, and discussion in Day 1975. Day proposes that it may represent otherwise unattested Pocumtuck or Nipmuck of central Massachusetts. It resembles a small sample of Agawam, of the Connecticut Valley, from 1645 (Day 1967). Loup B is in a 14 page wordlist by Magnon de Terlaye from 1755 (Goddard 1972a). It appears to be a composite of dialects, closest to Western Abenaki and Mahican.

Massachusett was spoken in southeastern Massachusetts around present Boston, Cape Cod, the Elizabeth Islands, Martha's Vineyard, and Nantucket. Dialects were said to have varied enough to make communication difficult. Literacy was introduced early by missionaries, particularly John Eliot at Natick, who translated the Bible (1663) and produced a grammar (1666), primer (1669), and other documents. A partial dictionary from Eliot's Bible translation appears in Trumbull 1903. The speech of the mainland is also represented in a vocabulary from 1707-8 by Cotton (1829). A wordlist from the North Shore is in Wood 1634. A translation of the Psalms and the Gospel of John into the speech of Martha's Vineyard (Wampanoag = Pokanoket) is in Mayhew 1709. Cowesit, spoken in northern Rhode Island, is documented in Williams 1643. The language was last used at the end of the 19th century, although Speck extracted 29 words 'with great difficulty' in 1907 (Prince 1907). Goddard & Bragdon 1988 contains a valuable collection of all known manuscript writings in the language by native speakers (deeds, wills, town records, etc.) with facsimile reproductions, decipherment, and translation. Included is a historical survey, grammatical sketch, and Massachusett and English indices of words.

Closely related to Massachusett is Narragansett, spoken in present Rhode Island and known principally from Williams 1643. It was last used early in the 19th century, but Gatschet recorded about 20 words in 1879 Providence (1973). A wordlist recorded in Newport by Ezra Stiles in 1769 from 'a Narragansett Indian', published in Cowan 1973a, may actually represent an Eastern Niantic component of Mohegan-Pequot (Goddard 1978: 72). Work with the Williams materials includes discussions of phonology (Aubin 1972, Pentland 1979) and morphology (Hagenau 1962).

A group of dialects termed Mohegan-Pequot-Montauk was spoken in eastern Connecticut (Mohegan, Pequot) and across the Sound on the eastern end of Long Island (Montauk). A 27-page manuscript by James Noyes, recorded in Stonington in 1690, is in the Beinecke library at Yale. In 1762, Stiles recorded a vocabulary at Groton, published in Cowan 1973b. Nearly a century and a half later, additional Mohegan material was recorded from Fidelia Fielding (1827-1908), the last known speaker. Included are over 400 words and texts (Prince & Speck 1903a,b, 1904, Speck 1904), and a diary she kept from 1902-1905 with facing page translation by Speck (1928b). Cowan 1973b compares the Stiles material with that in Prince & Speck. Montauk is known from a vocabulary recorded by Gardiner in 1798, printed in a number of works, including Wood 1824: 28, Latham 1846: 32-4, Bayles 1874: 63-4.

The language of western Connecticut and adjacent Long Island is not well attested. A pidginized variety of Quiripi is attested only in a catechism with interlinear translation by Peirson (or Pierson) in 1658 in Branford (Goddard 1996a: 19). A reconstitution of the phonology is in Rudes 1997. A vocabulary of a slightly different variety, perhaps Naugatuck, was recorded by Stiles in 1787 and is in the Beinecke Library at Yale. Directly across the Sound on Long Island, Jefferson recorded an Unquachog vocabulary in 1791 on the Poosepatuk reservation, now in the APS. From these scanty materials, it appears that Quiripi, Naugatuck, and Unquachog may have been dialects. The language of the Shinnecock, to the east of the Unquachog on Long Island, is not sufficiently attested to be classified.

The Mahican inhabited an area from Lake Champlain south along the Hudson River to Dutchess County, in present eastern New York, western Massachusetts, and northwestern Connecticut. Their language is known primarily from two missions established in the 18th century, one by Baptists at Stockbridge in the Berkshires, the other by Moravians at Shecomeco in Dutchess County. Both communities were linguistically heterogeneous, and both were forced to move a number of times. Mahican was last spoken in the 1930s in Wisconsin. Stockbridge Mahican is represented by translations of liturgical materials (Sergeant 1822), words and grammatical notes by Jonathan Edwards (1788), a wordlist in Jenks 1804, and a text (Prince 1905). Mahican material from the Moravian archives in Herrnhut, Germany, in Bethlehem, Pennsylvania, and in the Houghton Library at Harvard, appears in Masthay 1980 and 1991. Masthay 1980 contains hymns, a brief sermon, a letter, Biblical narrative, and word list, with decipherment and translation of the 18th century German into English. Masthay 1991 is a reworking of Schmick's dictionary from the mid 18th century, with historical phonology of the language by Pentland.

To the south of the Mahican were two closely related but mutually unintelligible Delaware languages: Munsee and Unami. The Munsee dialects were spoken at contact on western Long Island, in the lower Hudson Valley in southeastern New York, and into the Delaware Valley in northern New Jersey. By the 19th century most Munsee were in Ontario at Moraviantown, Munceytown, and Six Nations. Perhaps 15 speakers remain at Moraviantown (Ives Goddard p.c. 1992). Major published sources on Munsee include texts in Prince 1902b and Speck 1945: 60-2, grammars and sketches in Goddard 1979b, O'Meara 1990, 1998, a dictionary in O'Meara 1996, and historical phonology in Goddard 1982.

To the south of the Munsee in southern New Jersey, Pennsylvania, and Delaware, were the Unami dialects, or Lenape, from their name for themselves 'ordinary-person'. Three major dialects are attested: Northern Unami, Southern Unami, and Unalachtigo. Northern Unami, no longer spoken, was recorded by Moravian missionaries. Major published works, all from the late 18th century, are Zeisberger's

grammar and dictionary (1827, 1887) and a dictionary edited by Brinton & Anthony (1888). For Southern Unami, spoken by at most five in Oklahoma (Ives Goddard p.c. 1992), there is a translation (Blanchard 1837), texts (Speck 1931, 1937, Voegelin 1945), and grammars (Voegelin 1946a, Pearson 1972, Goddard 1979b). The Unalachtigo dialect is known from an early 17th-century vocabulary (de Laet 1909: 58-60).

Nanticoke and related dialects were spoken on both sides of the Chesapeake in present Maryland, Nanticoke on the Eastern Shore and Conoy or Piscataway, on the west. By 1748 these people had dispersed. Some eventually settled at Indian River Hundred, on the Indian River in Delaware; others made their way to Six Nations in Ontario. Records of the language are sparse. The Ten Commandments written in Conoy in 1633 were recently discovered. John G. E. Heckewelder, a Moravian missionary, recorded vocabulary 'from the mouth of a Nanticoke chief' in 1785 in Canada. At the request of Thomas Jefferson, Williams Vans Murray recorded 341 items on the Choptank River on the Eastern Shore. Both appear in Edwards 1788. (Numerals recorded by Pyrlaeus about 1795, found by Heckewelder and printed in Barton 1798, are actually not Nanticoke, but a West African language (Goddard 1981a)). The language had disappeared from Maryland and Delaware by the early 19th century, but was still spoken in Ontario. When Speck visited Six Nations in 1914, he recorded 61 items and was told that a monolingual Nanticoke man had lived there about 50 years before. Feest (1978: 248) reports that the last speaker died in 1856. All of the sources are discussed in Speck 1927 and Parker 1953.

Powhatan or 'the Virginia Indian language' was spoken by tribes of the Powhatan confederacy in tidewater Virginia from the Potomac south to the James River. There are only two major sources for the language, spoken into the 1790s. Captain John Smith recorded a wordlist between 1607 and 1609 (Smith 1612, 1624). William Strachey, first secretary to the Jamestown colony between 1610 and 1611, recorded a longer vocabulary. A 1618 copy now in the British Museum was published in Strachey 1849, and an earlier copy, now in the Bodleian Library at Oxford, was published in facsimile in Harrington 1955. Both copies are reprinted in Wright & Freund 1953 and discussed in Geary 1953, 1955, with the conclusion that more than one dialect is represented, perhaps in pidginized form. Siebert (1975) analyzes the material, providing a historical survey, reconstitution of the phonology and some grammatical morphemes, and lexicon of 263 words accompanied by the recordings of Smith and Strachey with cognates from Proto-Algonquian and other Algonquian languages. As Siebert notes, many Algonquian loanwords in English come from Powhatan. One is *opossum*, listed as *aposoum* 'beast in bigness of a pig and in taste alike' by Strachey and as *opassom* 'hath an head like a swine . . . tail like a rat . . . of the bigness of a cat' by Smith. In 1844, Dalrymple recorded 17 words identified as Pamunkey, part of the Confederacy. Mooney 1907 and Howell, Levy, & Luckenback

1979 show that most of the words are not Powhatan, probably not even Algonquian. Pamlico, or Carolina Algonquian, was spoken in present northeastern North Carolina. A few natural history terms and names in the language were recorded at the Roanoke colony (Quinn 1955). A vocabulary of 37 words appears in Lawson 1709: 225-7, reprinted in Pollard 1894: 14. All appear in Geary 1955. The Pamlico, nearly destroyed by smallpox and war with the English, finally joined the Tuscarora.

Central Algonquian

The Central Algonquian languages, Shawnee, Fox-Sauk-Kickapoo, Miami-Illinois, Potawatomi, Ojibwa, Cree, and Menominee, do not constitute a genetic subgroup. Any shared innovations are considered the result of contact. Goddard 1978b and Hollow & Parks 1980 provide good overviews of the Central and Plains languages, and Rhodes & Todd 1981 discuss in detail the Cree and Ojibwa dialect continua.

Shawnee speakers moved often during prehistoric and historic times, but now reside primarily in Oklahoma in three groups, the Absentee, Eastern, and Cherokee (or Loyal) Shawnee. Pearson (1991: 7) reported around 250 speakers, middle-aged and older. Shawnee may be more closely related to Fox-Sauk-Kickapoo than to the other languages. A number of wordlists were recorded during the 18th and 19th centuries (Pilling 1891). Major published work on Shawnee in the 20th century deals with phonetics (Hickerson 1958-9), phonology (Voegelin 1935a), historical phonology (Miller 1959a), paradigms (Voegelin 1936, Goddard 1967), stems (Voegelin 1938-40), noun inflection (Parks 1975), incorporation (Norcross 1993), and formal syntax (Boling 1981). Texts are in Voegelin 1953, Voegelin, Robinett, & Hickerson 1953, and Yegerlehner 1954; a dictionary in Pearson 1991; and a grammar in Andrews 1994.

Fox, spoken by the Mesquakie at Tama, Iowa; Sauk, spoken by the Sac and Fox or Sauk-Fox in central Oklahoma and the Nemaha Sauks on the Kansas-Nebraska border; and Kickapoo, spoken in Kansas, Oklahoma, Texas, and Coahuila, Mexico, are dialects of a single language. Mascouten is unattested but appears to have been a fourth dialect (Goddard 1972b). There are around 200 Fox speakers (Amy Dahlstrom p.c. 1996), several score Sauk, and over 1500 Kickapoo, including children (Akira Yamamoto p.c. 1992). Fox was documented early in the 20th century by William Jones, a speaker, with a dissertation on word formation (1904), texts (1907), and grammatical sketch (1911). Additional work on Fox includes Michelson 1921, 1925, Bloomfield 1925-7, 1984b (with critical edition in Goddard 1994), Geary 1945, 1946a,b, Hockett 1947, Voorhis 1971a, Goddard 1990b, f, 1991, Dahlstrom 1987, 1997, G. Anderson 1997, and articles in Dahlstrom (ed.) 1996. Goddard 1988 describes the role of stylistic dialects in change. For Kickapoo there are texts in Jones & Michelson 1915; grammatical descriptions in Voorhis 1967, 1974, 1977, 1983, Manuel-Dupont & Gathercole 1978, and Murdock et al. 1987; and dictionaries in

Ketakea 1988 and Voorhis 1988. A description of communicative strategies is in Gómez de Garcia 1994. An interesting aspect of Kickapoo, a pitch accent language (Gathercole 1983), is its whistle speech (Voorhis 1971b).

Miami-Illinois, a language consisting of two clusters of dialects, was spoken by the Miami, Wea, and Piankashaw in Indiana, the Illinois and Kaskaskia in Illinois, and later the Peoria in eastern Oklahoma. The last fluent speaker died in 1989 (Richard Rhodes p.c. 1992). Surveys of sources are in Costa 1991a,b. They include an Illinois-French dictionary of about 22,000 entries attributed to Jacques Gravier around 1700, a shorter French-Illinois dictionary attributed to Joseph Le Boullenger around 1725, a Miami wordlist from 1795 (Volney 1803: 2.525-32), extensive vocabulary and texts in Peoria, Miami, and Wea recorded by Gatschet in the 1890s, Peoria notes by Michelson from 1916, Miami vocabulary and texts elicited by Jacob Dunn, a lawyer, discussed in Voegelin 1938-40, and a wordlist recorded by Hockett in 1938 (1985). Phonology and morphology are described in Costa 1991b and 1994.

Potawatomi, spoken around Lake Michigan until the 1840s, is currently spoken primarily in Wisconsin, Kansas, Indiana, Michigan, Oklahoma, and perhaps Ontario. It may be more closely related to Ojibwa than to other Algonquian languages. The number of speakers was estimated at 200 in 1990 by SIL. The first published Potawatomi is a 19th century volume of primer lessons, dialogue, prayers, and hymns (Simerwell 1834). Major 20th century work is in Hockett 1948. Nichols & Nyholm 1976 contains texts. Additional material is in Hockett 1942 and 1966.

The Ojibwa dialects are spoken by nearly 50,000 people across Canada and into the U.S., from southwestern Quebec through Ontario, Michigan, northern Wisconsin and Minnesota, southern Manitoba, and southern Saskatchewan. They are well documented and work continues actively. Major published grammatical descriptions include Nicholas in Daviault 1995, Belcourt 1839, Baraga 1850, Cuoq 1866, 1891-2, Wilson 1874, Chamberlain 1891, Dumouchel & Brachet 1942, Holmer 1953a, Bloomfield 1958, Rogers 1964, Todd 1970, Rhodes 1976, Nichols 1980. Dictionaries include Baraga 1853, Cuoq 1886, International Colportage Mission 1903/1907, Lemoine 1909, Campbell 1940, Nichols 1973, Nichols & Nyholm 1976, 1995, Johnston 1979, Piggott & Grafstein 1983, Rhodes 1985, McGregor 1987. Piggott 1980 and Shrofel 1981 describe phonology, Malone 1997 reduplication, and Rhodes 1990 obviation. Texts are in Josselin de Jong 1913a, Jones 1917, Bloomfield 1958, Quill 1965, a bilingual newsletter (Nichols & Nyholm 1976-), Kegg 1991 (with a wordlist and grammatical notes), and especially Nichols 1988 and Bloomfield & Nichols 1991. A particularly rich documentation of dialects, with comparative texts, is in Valentine 1994.

The Cree dialects and subdialects stretch from Labrador westward into Alberta. Although adjacent dialects are mutually intelligible, more distant ones are not, so that at least two languages could be recognized. The complex dialect relations are

discussed in MacKenzie 1980 and MacKenzie & Clarke 1981. Rhodes & Todd 1981 include Mitchif, a mixed language formed from Cree and French, among the Cree dialects. The 1981 Canadian census listed 67,495 Cree speakers. There is good attestation of the language dating from the 17th century. Major published sources include a 17th century Montagnais grammatical sketch (Le Jeune 1973) and dictionaries (Fabvre 1970, Silvy 1974); 18th and 19th century translations of liturgical materials into Cree (see Pilling 1891, Hanzeli 1969); 19th century grammatical descriptions (Howse 1844 on Woods Cree, Lacombe 1874a,b on Plains Cree, Horden 1881 on Moose Cree); 20th century grammatical descriptions (Lemoine 1901a, McNulty 1971, Clarke 1982, Martin 1991, Cyr 1992, 1996 on Montagnais, Hives 1948, Wolfart 1969, 1973, 1991, Wolfart & Carroll 1973/1981, Ahenakew 1987 on Plains Cree, Béland 1978 on Atikamekw), pedagogical grammars (Edwards 1954, 1979, Ellis 1983, Vaillancourt 1978, 1980), and dictionaries (Lemoine 1901b, Faries 1938, Logan 1964, Mailhot & Lescop 1977, the Montagnais de La Romaine 1978, and Drapeau 1990, 1991 on Montagnais, Béland 1978 on Atikamekw, Anderson 1971 on Plains Cree, Laverdure & Alland 1983 on Michif, Bloomfield 1984a, MacKenzie 1987 on East Cree, MacKenzie & Jancewicz 1994 on Naskapi). Martin 1974 discusses Montagnais phonology, Drapeau 1979 noun morphology, Cyr 1990 aspect, Sparks 1992 syntax, Drapeau 1996 evidentials, and Dahlstrom 1991 and Starks 1994a,b grammar and discourse. Texts are in Bloomfield 1930, 1934, Bird 1975, Kapesh 1976, 1979, Ahenakew 1986, Wolfart 1988, Ahenakew & Wolfart 1992, 1998, and Ellis 1995.

Menominee is spoken by a few elderly persons in northeastern Wisconsin. Major published work includes a grammar by Bloomfield (1962), lexicon (1975), and texts (1928). Montgomery 1976 is a pedagogical grammar. The language has played an important role in the development of linguistic theory, partly because of its complex phonology (Bloomfield 1939, Miner 1975, 1979a, 1981a, Hockett 1981), partly as 1 of 4 languages on which Bloomfield's reconstruction of Proto-Algonquian was based.

Plains Algonquian

The Plains languages are Cheyenne, Arapaho-Atsina-Nawathinehena, and Blackfoot. This grouping is areal rather than genetic: the languages are no closer to each other genetically than to any other Algonquian language. Due to certain phonological changes, they differ sharply in appearance from other Algonquian languages. Proto-Algonquian ***keliwa*** 'eagle' appears as Cheyenne ***nete*** [nɪtsɻ], for example (Leman 1980a: 317); Proto-Algonquian ***weθali*** 'her husband' appears as Arapaho ***ű́x*** (Goddard 1974: 112). Blackfoot is also particularly divergent lexically.

Cheyenne is spoken in southeastern Montana by around 2000 and in western Oklahoma by around 500 (Elena and Wayne Leman p.c. 1992). Some children are still learning the language as a mother tongue. A dialect, So?taa?e or Sutaio, is no

longer spoken (Alford 1977, 1979, Goddard 1978c). Cheyenne is especially well documented in the work of Wayne Leman: 1980b is a clear grammar in two volumes, Leman 1980c, 1987 contain rich collections of texts with interlinear translation and glossary, and Alford & Leman 1976 and Glenmore & Leman 1984 are dictionaries. An earlier large dictionary is in Petter 1915 and a grammar is in Petter 1905-7. Additional texts are in Croft 1988. Cheyenne has a complex phonology with extensive vowel devoicing, syncope, and tone sandhi, described in Davis 1962, Frantz 1972a,b, Leman 1981. Russell 1987 analyzes verb agreement within a GPSG framework.

Arapaho-Atsina-Nawathinehena consisted of five dialects: Arapaho proper, Besawunena, Gros Ventre or Atsina, Nawathinehena, and Haʾanahawunena. Arapaho proper is still spoken by elderly people in two varieties: Northern Arapaho on the Wind River Reservation in Wyoming (840 speakers) and Southern Arapaho in western Oklahoma (600) (Hollow & Parks 1980). Closest to these was Besawunena, last spoken earlier in the 20th century and now represented by only a brief wordlist recorded by Kroeber 1899-1901 (1916). Slightly more distant is Gros Ventre or Atsina (Aáni), first attested around 1785 as Falls Indian (Umfreville 1790: 191-2, 202). The Gros Ventre now live with the Assiniboine on the Fort Belknap reservation in northern Montana. The last fluent speaker was Jim White Crow, who died in 1981 (Allan Taylor p.c. 1992). Modern documentation of the dialect is in Taylor 1967 and Salzmann 1969, which also contains a history of the group and bibliography. Flannery 1946 and Taylor 1982 describe men's and women's speech, and Taylor 1989 obsolescence. More distantly related to these three was Nawathinehena, also last spoken early in the 20th century and now known only from a wordlist by Kroeber (1916). Finally, Haʾanahawunena is unattested, but comments from Kroeber and Arapaho speakers indicate that it differed the most from Arapaho proper. Major published work on Arapaho proper is by Salzmann: a 1963 grammar, 1983 dictionary, 1951, 1954 (neologisms), 1956a, 1961a,c (phonology), 1956b (texts), 1959 (kinship), 1960a (dialectology, vocabulary), 1965 (nouns), 1967a,b,c (verbs). Bibliographies are in 1961b and 1980. Goddard 1974b reconstructs phonological changes that occurred between Proto-Algonquian and Proto-Arapaho-Atsina and thence to each dialect. Picard 1976 further discusses historical phonology and J. Anderson 1998 language shift.

Blackfoot is spoken on the Blackfeet Reservation (South Piegan) in northwestern Montana, and the Blackfoot (Siksika), Blood (Kainaa), and Piegan (Apatohsipiikani) Reserves in Alberta. There are 5000-8000 fluent speakers: under 100 in Montana, mainly elderly, 1/3 to 1/2 of the 6000 Siksika and 7500 Kainaa, and 1/4 to 1/2 of the 4500 Piegan (Don Frantz p.c. 1992). A few Siksika children know the language. The earliest recorded Blackfoot are the numbers 1-10 in *James Isham's Observations on Hudsons Bay, 1743* (Taylor 1992) and 44 words in Umfreville 1790: 202. Taylor 1969: 11-22 contains an annotated bibliography of work on Blackfoot to that point, and

Dempsey & Moir 1989 further sources. A 19th-century grammar and dictionary are in Tims 1889. Josselin de Jong 1913b and 1914 contain texts, and Geers 1917 discusses prefixes. Of special importance is work by Uhlenbeck, with texts (1911, 1912), grammar (1938), and dictionaries (Uhlenbeck & van Gulick 1930, 1934). More recent are grammars in Taylor 1969 and Frantz 1971, 1991, and a dictionary in Frantz & Russell 1989. Lowery 1979 and Proulx 1989 discuss phonology, Thomson 1978 geminate stops and nasals, and Pustet 1995 obviation. Taylor 1989 surveys ethnobotany.

The California languages

The two California languages, Wiyot and Yurok, have been grouped together as Ritwan, but they may be no closer to each other than either is to Algonquian. In 1903, Dixon and Kroeber noted structural resemblances between the two, then in 1913, based partly on work by Sapir, they proposed that Wiyot-Yurok constituted a genetic group they termed Ritwan. Sapir (1913a) provided sound correspondences and sets of grammatical markers indicating their relationship to each other and to Algonquian. Michelson (1914) responded critically, and a debate ensued (Sapir 1915a, Michelson 1915, Sapir 1915b). At that point little documentation was available for either Wiyot or Yurok. As more information has become available, regular sound correspondences have been uncovered, and the relationship is now considered fully established (Haas 1958). Work continues (Haas 1966, Teeter 1964a, 1974, Hamp 1970, Goddard 1975, 1979a, Berman 1981, 1982a, 1984, 1990a, Proulx 1984, 1985).

Wiyot was spoken along the northwest coast of California around Humboldt Bay and present Eureka. The last speaker, Della Prince, died in 1962. Early work consisted of a brief sketch in Kroeber 1911: 384-431, and grammar and texts in Reichard 1925. More reliable are the grammar and text collection in Teeter 1964b and handbook in Teeter & Nichols 1993. Teeter 1959 describes consonant harmony.

Yurok (from the Karuk 'downriver') is spoken to the north of Wiyot, from around the mouth of Klamath River upriver about 30 miles, and south to Trinidad. There are perhaps 20 good speakers in their 80s or 90s (Jean Perry p.c. 1992). Most people born before 1950 know something of the language. Early work on Yurok is in Kroeber 1911: 414-26 and Waterman 1923. Most important are the grammar, texts, and lexicon in Robins 1958. In addition, Robins describes pronominal prefixes (1962) and word classes (1966), Haas classifiers (1967), Berman phonology (1981), the diminutive (1986), subordination (1972), and further data (1982b), and Buckley speech register (1984).

Structural overview

A small phonological inventory is reconstructed for Proto-Algonquian: 13 consonants (*p, t, č, k, s, š, h, m, n, θ, l, w, y*) and 4 short and long vowels (*i, e, a, o;*

i·, *e·*, *a·*, *o·*). Bloomfield's reconstructed **θ* (1946) is realized variously as *θ*, *t*, *c*, *l*, *r*, *n*, and *y*. Reconstruction of consonant clusters has proven complex. Cheyenne, Atakapa, and Kickapoo have developed tone. Blackfoot has developed geminate consonants from secondary clusters. Yurok has acquired ejectives through contact.

Morphologically, the languages are polysynthetic. Examples cited here are drawn from Todd 1970, a clear, detailed grammar of Severn Ojibwa. Her symbols have their standard Americanist values; as in much work on Algonquian, a macron (¯) represents vowel length.

Nouns may be morphologically simple (*kōn* 'snow'), compound (*wāhsikani-pimitē* 'engine-oil, gasoline'), or derived (*anohkī-win* 'to.work-NOMINALIZER' = 'work'). A special feature of nouns in Algonquian languages is gender: all nouns are classified as either animate or inanimate. Entities normally considered animate on semantic grounds, such as persons and animals, are grammatically animate: *nāpē* 'man', *kayāšk* 'gull'. Nouns for certain objects are also grammatically animate, including full-grown trees and logs (*šikop* 'fir tree'), wheat and wheat products (*kēk* 'cake'), tobacco and smoking paraphernalia (*nahsēmā* 'tobacco'), some other plants and plant parts (*miskomin* 'raspberry'), certain body parts (*omāmān* 'his eyebrow'), animal hides and clothing made from them (*wāpōswayānēkōt* 'rabbitskin coat'), some other apparel (*sēnipā* 'ribbon'), some utensils (*ahkihk* 'kettle'), some machines with moving parts (*tihtipitāpān* 'wagon, car'), and some natural objects (*kōn* 'snow', *ahsin* 'rock', *kīsihs* 'sun, moon, month'). All other nouns are grammatically inanimate.

Number is obligatorily specified on count nouns, in contrast with many other North American languages. Plurality is marked with suffixes of varying shape, depending in part on the gender of the noun: *nāpēns* 'boy', *nāpēns-ak* 'boy-s'; *mahkisin* 'shoe', *mahkisin-an* 'shoe-s'. As in many other languages, possession is shown by a pronominal prefix, with accompanying noun to identify the possessor if necessary: *mahkisin* 'shoe', *ni-mahkisin* 'my shoe'; *o-kosihsan* 'her-son', *ihkwē o-kosihsan* 'woman her-son' = 'the woman's son'. Some nouns, called dependent nouns, must appear with a possessive pronominal prefix. They refer to inalienable possessions such as body parts and kinsmen. A locative suffix may add a meaning 'in, on, at, to, from': *čīmān* 'canoe', *čīmān-ink* 'in the canoe'.

An important distinction is marked between proximate and obviative third persons. The most prominent or central third person in a context is classified as proximate, while all others are classified as obviative. If only one participant is human, that one will normally be proximate. When multiple human participants are involved, the proximate role may shift from one to the other, as the point of view is shifted (Wolfart 1978, Goddard 1990b). The categories of gender, number, and proximate/obviative have ramifications elsewhere in the grammar as well, in demonstratives, pronominal affixes on nouns and verbs, and the selection of verb stems.

Verb stems in Algonquian languages have traditionally been analyzed in terms of three basic components: initials, medials, and finals. (An extensive discussion of stem derivation is in Goddard 1990d.) Initials, or roots, are of several types. They may denote actions or their result (*pōhkw-* 'break'), qualities (*wahkēw-* 'be weak'), or other things (*ahkw-* 'so long'). Medials, which are optional, are much like incorporated nouns (Wolfart 1971). They may indicate the involvement of a body part (*nimpōhkokātēhšin* = *nim-pōhkw-kāt-ēhšin* 'I-break-leg-fall' = 'I break my leg in a fall'), or function as classifiers, indicating the kind of substance involved (*pahkopīhsē-* 'fall into the water'). Finals often convey the causative or instrumental element of an action and establish its grammatical category (*-pah* 'run from', *nakači-pah-* 'run away and leave behind', *-kah* 'with an axe' in *čīki-kah-* 'hew with an axe').

The finals distinguish four basic verbal categories: Animate Intransitive or **AI** (intransitive verb with animate subject: *māwančihiti-* 'congregate'), Inanimate Intransitive or **II** (intransitive with inanimate subject: *patahkitē-* 'stick upright'), Transitive Animate or **TA** (transitive with animate object: *očīm-* 'kiss'), and Transitive Inanimate or **TI** (transitive with inanimate object: *šāpošk-* 'pass through'). The choice of stem reflects the grammatical gender of the associated subject or object. The AI stem *akončin* 'float' would be used of a person or log (both grammatically animate), but the II stem *akontin* 'float' would be used of a canoe (grammatically inanimate): *akončin nāpē* 'the man is floating', *akontin čīmān* 'the canoe is afloat'. The TA stem *wāpam-* 'see' would be used for seeing a child, rock, or raspberry (all grammatically animate), but the TI stem *wāpant-* 'see' would be used for seeing a shoe or strawberry (grammatically inanimate). As can be seen by comparing their forms, the pairs of stems differ in their final elements.

Verbs contain pronominal affixes referring to their core participants: *ni-minwēntam* 'I am happy', *ki-minwēntam* 'you are happy'. First, second, and third persons are distinguished, with inclusive and exclusive first person and proximate and obviative third person, and singular and plural number. The shape of the pronominal affixes does not change with case. Algonquian languages are known instead for their direct/inverse systems. The first person pronominal prefix has the form *ni-* whether it functions as a subject 'I' or object 'me', as an agent or patient: *ni-wāpamā* 'I see him/her', *ni-wāpamik* '(s)he sees me'. If a first person acts on a third, the direct form of the verb is used: *-wāpamā*. If a third person acts on a first, the inverse form is used: *-wāpamik*. Similarly, the second person pronominal prefix *ki-* 'you' does not change according to case. If a second person acts on a third, the direct form is used: *ki-wāpamā* 'you see him/her'. If a third acts on a second, the inverse is used: *ki-wāpamik* '(s)he sees you'. A proximate acting on an obviative is also expressed with the direct form, but an obviative acting on the proximate with the inverse. Special forms are used for combinations of first and second persons.

Algonquian languages display several different conjugations, termed orders. Severa Ojibway distinguishes independent, conjunct, and imperative orders. The independent order is used for basic declarative or indicative sentences like those above. The conjunct order is used for dependent clauses, such as relative clauses (*ihkwē kāanohkīč* 'the woman who is working'), nominalizations (*kāpimināmakahk* 'that which is flying' = 'airplane'), and adverbial clauses (*ēkišākamitēnik* 'because it is hot'), but conjunct verbs also often stand alone as sentences. The imperative order is used for commands. Within each order, various modes may be specified. Independent order verbs may be marked for past, dubitative, and/or negative. Conjunct verbs may be marked for past and/or dubitative. Imperative verbs may be marked for delayed imperative (*pīntikēn* 'Come in!', *pīntikēhkan* 'Come in later!').

Some of these constructions can be seen in the lines below from a story by Francis Fox in Ottawa, another dialect of Ojibwe. The story appears in Nichols 1988: 45-6. The practical orthography of the original is retained. Doubled vowels are long: *ii* = *ī*. Abbreviations AI, II, TA, and TI represent verbal categories ANIMATE INTRANSITIVE, etc. The number 3 represents third person proximate, and 3' third person obviative. Contrasts can be seen here between conjunct and independent (INDEP) orders, between animate intransitives ('walk') and inanimate intransitives ('dark'), and between proximate (a man) and obviative (a bear).

Gii-pagdosed	*iidig*	*gaa-dbikak.*	
PAST-AI.CONJUNCT.set.out.walking.3	apparently	PAST-II.CONJUNCT.be.dark.INAN.3	
'So after it got dark he had to set out on foot.			

Mkoon	*iidig*	*gaa-zhi-nkweshkwaad.*
bear.ANIM.3'	apparently	PAST-in.a.certain.way-TA.CONJUNCT.meet.3/3'
That's how he came to meet the bear.		

"Aanpii-sh	*ezhaayin?"*	*wdigoon-sh*	*ge.*
where-then	AI.CONJUNCT.go.2	TA.INDEP.tell.3'/3-then	and
"Where are you going?" the bear asked.			

"Ann Arbor,",	*wdinaan*	*ge.*
	TA.INDEP.say.3/3'	and
"Ann Arbor".		

"Ka-ni-waawiidsemi,"	*kido*	*giiwenh*	*wa*	*mko.*
FUTURE-off-AI.INDEP.walk.together.2+1	AI.INDEP.say.3	QUOT	3	bear.ANIM
"Why don't we walk together?" the bear suggested.'				

= Yakonan*: *Alsea, Yaquina = Yakwina = Yakona*

Alsea

Yaquina = Yakwina = Yakona

Alsea was spoken in two dialects or closely related languages, Alsea and Yaquina, **ng** the central Oregon coast. At contact, speakers of Alsea proper lived on Alsea **y** and up the Alsea River, and those of Yaquina lived to the north of them on **aquina** Bay and up the Yaquina River (Zenk 1990a: 568). The last speakers moved **o** the Siletz reservation in 1875, where the common language was Chinook Jargon. **The** exact relation between Alsea and Yaquina has not been established, but they **appear** to have been dialects. Yaquina was last recorded in 1884 by James Owen **Dorsey**. Alsea was last documented in 1942 by J.P. Harrington from John Albert, the **only** remaining speaker.

Powell grouped Alsea and Yaquina with Siuslaw into a Yakonan family in 1891. **Sapir** added Coos to form a 'Coast Oregon Penutian' subgroup, which he then **combined** with Takelma and Kalapuya into Oregon Penutian in his 1921 and 1929 **classifications**. Further comparison has provided little basis for Powell's or Sapir's **subgroupings**, but a distant relationship among Alsea, Siuslaw, and Coos appears **probable** (Thompson 1973: 374, Buckley 1987). Golla has shown remarkable **similarities** between Alsea and the Wintuan languages 200 miles to the south in California (1997). All are still considered likely members of a possible Penutian stock.

A good survey of work on Alsea can be found in Buckley 1989a. Words and phrases were collected by Horatio Hale in 1846, John P. Milhau in 1856, J. Owen Dorsey in 1884, Edward Sapir in 1906, and Philip Drucker in 1934. Livingston Farrand recorded vocabulary and texts in 1900, and Leo Frachtenberg collected extensive information in 1910 and 1913. In 1917 Frachtenberg published 4 texts of Farrand's and his own. In 1920 24 more texts appeared, two with word-by-word translations. Included with the texts are lists of stems and affixes. A grammar he completed in 1918 remains in manuscript form in the APS. In 1935 Melville Jacobs recorded additional vocabulary and grammatical notes, and in 1942 J.P. Harrington reelicited material from earlier sources. Pierce compared pronouns and numerals in Alsea, Siuslaw, Coos, and Takelma (1966). More recently Eugene Buckley has worked with the earlier materials and published discussions of the phonemic inventory (1989a), syllable structure (1989b), case (1988a), the noun phrase (1989c), and aspect (1988b). An analyzed text is in Seaburg 1992. Material cited here is drawn from Buckley's analyses of the Frachtenberg data (Eugene Buckley p.c. 1997).

The rich consonant inventory is typical of the Northwest. There are labial, alveolar, velar, labio-velar, uvular, and labio-uvular plain stops and affricates (*p, t, c, k, kʷ, q, qʷ*), and ejectives (*p̓, t̓, c̓, k̓, kʷ̓, q̓, qʷ̓*), as well as *ʔ*. Fricatives are *s, ɬ, x, x, xʷ, x, xʷ*,

h and perhaps *hʷ*. The apical affricates and fricatives are intermediate betwee alveolar and palatal (*[c/č], [c̓/č̓], [s/š]*). Stops originally transcribed with aspiratio are analyzed as sequences of stop plus *h*. Resonants *m, n, l, w,* and *y* appear both plain and glottalized. There are oral and nasal vowels.

Alsea stems show grade alternations similar to those of other Penutian languages: *tp-ay* 'jumped', *tap-al* 'jumps'; *xm-ix* 'turned back', *xim-al* 'turns back'. The shape of the stem is determined by the following suffix. Buckley (1989b) describes the alternation in terms of vowel copying rather than metathesis or a template.

There is some reduplication, complete and partial: *x̣ʷix̣ʷi* 'a paddle'; *pxilcus-ay-nx* 'ask-INCHOATIVE-him' = 'he asked him', *pxipxilcus-x̣-sx̣* 'REDUPLICATION.ask-COMPLETIVE-RECIPROCAL' = '(they) asked each other'.

Nominal affixes include a diminutive (*məhayát-aw* 'old-DIM' = 'little old man'), augmentative (*məshálsla-cłu* 'woman-AUGMENTATIVE' = 'old woman'), third person possessive (*c-łya-k* '3POSSESSIVE-mother-3POSSESSIVE' = 'his mother') plurals (*c-łámx̣ət-u?u-k* '3POSSESSIVE-child-PLURAL' = 'their children'), collectives, distributives, an instrumental, and allative (*kwí=ks=awk̓* 'canoe=ALLATIVE=inside' = 'into the canoe'). Noun phrases usually contain a determiner before the noun, consisting of a spatial deictic plus either a general referential element (*ku-s cutáys* 'PROXIMATE-REFERENTIAL salmon' = 'this salmon') or a first or second person possessive (*ku-hám tiqís* 'PROXIMATE-2SG.POSSESSIVE feather' = 'your feather'). Nominal case marking follows an ergative-absolutive pattern. Ergative nominals show an ergative proclitic *qa-/x̣a-* at the beginning of the noun phrase. Absolutive nominals are unmarked.

təmúhu	*yas-aw-?y-áy-nx*	*qa-s*	*múləpcənísla*	*a-s*	*qəcíłp.*
and.now	say-DUR-ITER-INCH-3SG.OBJ	ERG-REF	coyote	DISTAL-REF	wolf

'Then Coyote spoke to Wolf.'

Verbal affixes include markers of mode and aspect, as above, a comitative, and a passive. Nominal case marking is unaffected by the passive: agents remain ergative.

tem=əłx	*múhu*	*yas-aw-?y-á-łn-x̣*	*x̣a-s*	*łəyáct=əłx.*
and=3PL.SUBJ	now	say-DUR.ITER-INCH-PASSIVE-CMPL	ERG-REF	inhabitant=3PL

'Then they were spoken to by the inhabitants.'

Core arguments are specified pronominally within each clause, whether or not full noun phrases are present. The pronouns follow a nominative-accusative pattern. Subjects (except third person, which is unmarked) are expressed by enclitics to the first major constituent, and objects by verbal suffixes. Pronouns distinguish three persons, three numbers, and inclusive and exclusive first person.

áy-nx=ən		*a-sən*	*kíyay.*
INCHOATIVE-3OBJ=1SUBJ		DISTAL-1POSS	knife

'pped my knife.'

ese structures can be seen in the following excerpt from the story of Vulture cribed by Frachtenberg in 1920 and fully reanalyzed by Buckley (p.c. 1997).

ture
ture

w=ks	*híka*	*xúləm-tx̣a*	*ik=tás*	*lahwí.*
erywhere=ALL	just	travel-PROGRESSIVE	LOCATIVE=DET	world

He was traveling everywhere in the world.

təmúhu	*?is*	*x̣ám-ət*	*s=lahwí*	*wíl-x̣*
then	at	one-ADJECTIVE	REFERENTIAL=place	come-COMPLETIVE

Then he came to one place

təm	*?ic-áy-x̣a.*
and	live-INCHOATIVE-COMPLETIVE

and he lived there.

kʷas	*cqíw-iɬ-x̣*
REL	near-INDIRECT.OBJECT-COMPLETIVE

Those to whom he had come near

təm	*mə-łámx̣ət-u?u-t.*
and	ATTRIBUTIVE-children-PLURAL-STATIVE

had children.

mənátəm	*məkʷá?sli*
youngest	woman

The youngest was a woman

təm	*qúci*	*lahy-ahu-ɬ-x̣.*
and	3SG	love-TRANSITIONAL-INDIRECT.OBJECT-COMPLETIVE

and he fell in love with her.'

Atakapa*: *Eastern, Akokisa, Western*

Atakapa was spoken by a number of small bands along the Gulf of Mexico fro Vermillion Bay and Bayou Teche in Louisiana to Galveston Bay and up the Trini River in Texas. Swanton 1929: 122 traces the name to the Choctaw *hatak apa* 'ma eaters'. The language was last spoken early in the 20th century.

The Akokisa dialect is known from a list of 45 words recorded in 1721 by Jean Béranger, a sea captain, from captives taken in Galveston Bay (Villiers du Terrage and Rivet 1919). The Eastern dialect, the most divergent, is known from a list of 287 entries recorded or copied by Martin Duralde at the Attackapas Post (modern Franklin, La.) in 1802 (Vater 1821, Gallatin 1836: 307-67). The Western dialect is the best documented. Gatschet recorded around 2,000 words and sentences, as well as texts, during January of 1885 at Lake Charles from two of the last speakers to know the language well, Louison Huntington and Delilah Moss. Swanton recorded a few Western forms from Teet Verdine in 1907 and from Armojean Reon in 1908. All of this material appears in Gatschet and Swanton 1932, a dictionary with nine texts. A grammatical sketch based on Gatschet's material, with analyzed text, is in Swanton 1929a. Haas and Swadesh recorded a few words in 1934. Guides to material are in Gatschet and Swanton 1932, Haas 1973a, 1979a, Crawford 1975, and Booker 1991a.

Atakapa is not closely related to any other language. In 1919 Swanton found lexical and structural similarities among Atakapa, Tunica, and Chitimacha, and grouped them together into a Tunican stock. Swadesh proposed regular sound correspondences between Atakapa and Chitimacha, providing 258 possible cognates and reiterating the impression that any relationship would be remote (1946a, 1947). Haas (1952) hypothesized a larger 'Gulf' stock including Muskogean, based on terms for 'water' and 'land' (1951, 1952). Material cited here is drawn from Swanton's 1929 sketch.

Atakapa noun stems can be simple roots (*ai* 'swamp'), compound (*nēc añ* = 'tree grease' = 'soap') or nominalized verbs or clauses (*nōkam* 'fins stand out' = 'shark'). (The symbol *c* represents [š], and *ñ* [ŋ].) Location may be indicated by a suffix or postposition: *nun-kin* 'village-in' = 'in villages'. Possession is indicated by a preceding free possessive pronoun and/or a noun phrase referring to the possessor: *yūkhiti icak kaū ha tal* 'Atakapa person dead his skin' = 'the skin of a dead Atakapa'.

Verb stems can also be simple roots or compound: *kǭ-hi-pam-ūl-et* 'seize-me-beat-they-PAST' = 'they seized and beat me'. They may be reduplicated to indicate plurality, iteration, or intensity: *mōk* 'short', *mōkmōk* 'short things'; *kōl* 'rub', *kōlkōl* 'rub repeatedly'. For some actions, distinct verb roots are employed for singular and plural: *kaū* '(one) to die', *pix* '(several) to die'. Verbal prefixes include an indefinite object (*cōk-cīl-ne* 'things-sew-VOLITIONAL-FUTURE' = 'to sew things'), objective

inal prefixes in three persons and two numbers (*ic-pats-ha-hat* 'us-whip-VE-PAST' = 'he did not whip us'), a reflexive (*hat-kūts-n-t-ō* 'self-cut-VOLITIONAL-T-I' = 'I cut my (own) hair'), and reciprocal (*hōk-wal-c-n-tsel* 'each.other-fan-VE-VOLITIONAL-we' = 'we fan each other'). Verbal suffixes include a plural and ve, infinitive, future, continuative, volitional (sometimes used for future), perfect in a variety of contexts), subjective pronominal suffixes in three persons and numbers, a negative, and tense: *na-hi-weūc-ki-n-t-ō* 'you-GENERAL.OBJECT-fun.of-INFINITIVE-CONTINUATIVE-VOLITIONAL-PERFECT-I' = 'I am going to make fun ou.'

peratives are unmarked verb stems: *am* 'drink!' Questions are indicated with al particle *a*: *yac kīwilcūl a* 'Are they Frenchmen?'; *na ca a* 'Who are you?' A ix *-(i)n*, which has the same form as a locative suffix on nouns, subordinates ses: *yūkit icōkō-in* 'while we are chiefs'. It often serves as a nominalizer: *cec nek-*figs being ripe' = 'fig season'; *kūts-ne-n* 'cut-VOLITIONAL-SUBORDINATE' = 'knife'. A ffix *-p* subordinates reasons: *icōkēci-p* 'because I am sick'.

The text below was dictated to Gatschet by Louison Huntington in 1885 and ublished in Gatschet and Swanton 1932: 11-12.

Cakta´lko (Human-skin Desirer)

Yuk'hi´ti	*ica´k*	*ka´-u*	*ha´talko´at*	*hina´k*	*cakio´ñculet,*
the Atakapa	a man	dead	his body turned into	thus	they named it

'When an Atakapa was dead they called him by this name.

Icā´k	*ica´t*	*ha´n*	*hu´-ulat;*
human	head	not having	they saw

When one first encountered him, he appeared to lack a head

po´-ol	*tsā´t'n*	*hu´-ulat,*	*ha*	*icā´t*	*ha*	*u´c*	*mōn* *ná-ucem.*
lowered	in front	afterward	his	head	his	body	all covered with hair

but afterwards they saw his head bent forward and his body all covered with hair.

Kiwilc	*hiku´lat*	*to´'nta´vm*	*ne´c*	*hico´mckin*
the creoles	have seen him	sometimes	trees	small

Creoles have seen him at times coming through the bushes

yuk'hi´ti	*tu´lip*	*lōxkin*	*iwt'n*	*hū´nst;*	*yi´l*	*iwā´t'n.*
Indian	Lake on prairie on		he came	he is seen	in the daytime	to come

on the prairie by Indian Lake and in the daytime.'

ATHABASKAN-EYAK-TLINGIT FAMILY

ATHABASKAN = ATHAPASKAN = ATHABASCAN = ATHAPASCAN

NORTHERN ATHABASKAN

SOUTHERN ALASKAN

Ahtna=Atna=Ahtena=Copper River **Tanaina=Dena'ina**

CENTRAL ALASKA - YUKON

Deg Hit'an=Ingalik **Upper Kuskokwim=Kolchan**
Holikachuk=Innoko **Lower Tanana=Tanana=Minto**
Koyukon=Ten'a **Tanacross**
Han=Moosehide=Dawson **Upper Tanana**
Gwich'in=Kutchin=Loucheux=Takudh **Tutchone:** *Southern, Northern*

NORTHWESTERN CANADA

Tahltan-Tagish-Kaska=Nahanni **Slave(y)-Hare-Bearlake-Mountain**
Sekani **Dogrib**
Beaver **Chipewyan**
Tsetsaut*

CENTRAL BRITISH COLUMBIA

Babine-Witsuwit'en=N. Carrier **Chilcotin-(Nicola=Tinneh*)**
Carrier
Sarcee=Sarsi=Tsuut'ina
Kwalhioqua-Clatskanie=Kwalhioqua-Tlatskanie*: *Willapa=Willoopah, Suwal*

PACIFIC COAST ATHABASKAN

OREGON ATHABASKAN

Upper Umpqua* **Galice-Applegate***
Rogue River: *Upper Coquille*, Sixes*,* **Tolowa**: *Chetco, Smith River*
Tututni, Euchre Creek, Chasta Costa**

CALIFORNIA ATHABASKAN

Hupa=Hoopa-Chilula: *Hupa, Chilula/Whilkut**
Mattole-Bear River*: *Mattole, Bear River*
Eel River*: *Sinkyone-Wailaki-Nongatl-Lassik-Cahto=Kato*

APACHEAN

WESTERN APACHEAN

Navajo=Navaho=Diné **Chiricahua-Mescalero**
Western Apache

EASTERN APACHEAN

Jicarilla **Lipan**
Plains Apache=Kiowa-Apache=Na'isha

Eyak

Tlingit

The Athabaskan-Eyak-Tlingit family is the largest in North America in several senses. It covers the widest territory, from northeastern Alaska across the Yukon and Northwest Territories to Hudson Bay, south through British Columbia, Alberta, Saskatchewan, and Manitoba, down into Washington, Oregon, and California, and into the Southwest. It also contains more languages than any other family and is spoken by more people of all ages. Divisions within Athabaskan are as much geographical as genetic. The Pacific Coast languages, for example, may not constitute a subgroup, but rather a chain with several deeply differentiated units. Among the Alaskan and Canadian languages, subgrouping is tentative; long contact has resulted in dialect complexes with fuzzy boundaries between neighbors and many shared features due to areal diffusion. The classification given here is by Keren Rice. Further dialectal divisions are discussed with each language group. (Two spellings, *Athabaskan* and *Athapaskan*, are in current academic use. The first was adopted by the Alaska Native Language Center, the second by the Smithsonian and the National Museum of Civilization in Canada. The spelling *Athapascan* was used in Powell 1891, and *Athabascan* is preferred by the Tanana Chiefs' Conference.) The possibility of a deeper relationship to Haida has been proposed, but many similarities are now seen to be a result of contact or earlier misanalysis of Haida (Levine 1979, Leer 1990, 1991). (See section 6.3.) Extensive bibliographies of work on Athabaskan languages are in Pilling 1892, Parr 1974, and Krauss & McGary 1980, and surveys in Krauss 1973a, 1979, 1980, 1997, Krauss & Golla 1990, Cook & Rice 1989a, and Cook 1979, 1992. The present sketch has benefited immensely from these sources and from a seminar given by Keren Rice at the 1995 Linguistic Institute in Albuquerque.

Of the 23 Northern Athabaskan languages, 11 are spoken in Alaska. The bulk of the documentation of these languages has come out of the Alaska Native Language Center at the University of Alaska, Fairbanks, under Michael Krauss. Estimates of numbers of speakers of the Alaska languages given here are from Krauss 1997.

Ahtna is spoken by about 80 people over age 50 along the Copper River in four dialects: Lower Copper River (Chitina to Copper Center), Central Copper River (Copper Center to Chistochina), and Western (Mendeltna, Tyone Lake, Sutton, Cantwell), which are similar, and Upper or Mentasta (Chistochina, Batzulnetas, Mentasta), which is more divergent, sharing features with the neighboring Tanacross and Upper Tanana. The Western dialect has exerted considerable influence on the neighboring Upper Inlet Tanaina (Kari 1977a). There is a noun dictionary arranged topically in Kari & Buck 1975, and a comprehensive dictionary with example sentences and appendices of kin terms, verbal morphology, and loanwords, in Kari 1990. Placenames are in Kari 1983. Texts with interlinear translation are in Buck 1975 and Kari 1986. Verb structure is also discussed in Kari 1979, 1989, and 1992.

Tanaina or Dena'ina ('people') is spoken around Cook Inlet on the South coast of

Alaska by around 75 adults, the youngest in their 30s at Lime Village. Dialect divisions are deep. Kari 1975a recognizes two major groups, Upper Inlet and Lower Inlet. Upper Inlet includes Tyonek, Eklutna, Knik, Kroto, Montana Creek, and formerly Susitna. Lower Inlet is subdivided into Outer Inlet (Kenai, Polly Creek, and formerly Kustatan and Seldovia); Iliamna (Pedro Bay, Old Iliamna); and Inland (Nondalton, Lime Village, Stony River). Kari describes diffusion between Tanaina and Ahtna (1977a) and linguistic prehistory (1989b). Noun dictionaries are in Kari 1974, 1977b, and Tenenbaum 1975, grammatical discussions in Kari 1975b,c, and texts in Pete 1974, 1977, Kari 1975d, 1977c,d, Nicolie 1977, Chickalusion & Chickalusion 1979, Kari & Fall 1978, Tenenbaum & McGary 1984 (originally published in 1976), and Kari & Boraas 1991. A grammar is in Tenenbaum 1978. Tanaina speakers are writing as well. Albert Wassilie of Nondalton produced educational materials, including a dictionary (1978). Peter Kalifornsky of Kenai, born in 1911, began to write in 1972 and produced language lessons, satires, poems, and autobiographical essays. His work appears with translation in Kalifornsky 1977, 1984, and Kari & Boraas 1991.

There are two dialects of Deg Hit'an or Ingalik (also called Deg Xinag), one along the lower Yukon River in Alaska in Shageluk, Anvik, and Holy Cross, the other on the middle Kuskokwim from Aniak to below Vinesale. There are perhaps 40 speakers, the youngest, at Shageluk, in their 50's. Pilling 1892 and Parr 1974 list early missionary materials. Especially important are the texts published in 1914 by the Episcopalian missionary John Chapman (44 stories in English, 17 in Deg Hit'an and English with vocabulary by Pliny Earle Goddard). A re-edition of Chapman's stories with interlinear translation is in Chapman & Kari 1981. Additional texts with free translations are in Paul 1985, Deacon 1987, and Kari 1987, and a noun dictionary is in Kari 1978b. A literacy manual with texts and tapes is in Hargus & Taff 1993.

Holikachuk or Innoko, spoken now at Grayling on the lower Yukon River in Alaska, was the language of Holikachuk on the upper Innoko River until 1964. There are now perhaps a dozen speakers, all over age 60, the youngest at Saheluk. Krauss & Golla note that it is linguistically close to Koyukon, socially and geographically close to Ingalik, and partially intelligible to both, though Koyukon and Ingalik are not intelligible to each other. A noun dictionary is in Kari 1978a. Children's stories are in Rock 1985a,b,c, and Maillelle 1985, 1987.

Koyukon is spoken by around 300 adults over the age of 50 in west-central Alaska, in 11 villages along the Yukon and Koyukuk Rivers. Three major dialects are recognized: Lower (Kaltag, Nulato), Central (Koyukuk, Huslia, Hughes, Allakaket, Galena, Ruby), and Upper (Stevens Village, Manley Hot Springs, Tanana, Rampart, South Fork; Crossjacket, Minchumina-Bearpaw). These last may constitute divergent dialects. References to early missionary contributions are in the bibliographies and sketches cited above. Notable among these is the work of the Jesuit Jules Jetté from

early 20th century, which includes a grammar and extensive dictionary. A new tionary should appear soon (Jones & Jetté forthcoming). Texts are in Jones & nry 1979 (with free translation); Attla 1983 (with notes in McCurry & Jones 1983), 89 (with guide in C. Thompson & H.F. Thompson 1989), 1990 (with guide in hompson 1990); and Thompson 1983. Grammatical studies include Henry & Henry 965 and Landar 1967a on classificatory verbs, Henry & Henry 1969 on locationals, hompson 1980 on verb morphology, Thompson 1989a,b, 1991, 1993 and Axelrod 994 on pronouns and voice, Axelrod 1990 on incorporation, Fortescue 1992a and specially Axelrod 1993 on aspect, and Thompson 1995 on inalienable possession.

Han is spoken on the Yukon River by perhaps 7 in Eagle, Alaska and 8 in adjacent Dawson in Canada. A collection of stories in Han and English is in Ridley 1983.

Kutchin or Gwich'in is spoken in northern Alaska and Canada, where it was earlier referred to as Loucheux or Takudh. Alaskan or Western Kutchin is spoken by around 300 along the Yukon River at Circle, Birch Creek, Beaver, Fort Yukon, Chalkyitsik, Venetie, and Arctic Village. Canadian or Eastern Kutchin is spoken by about 100 at Old Crow in the Yukon Territory, and about 300 at Aklavik, Inuvik, Fort McPherson (Peel River), and Tsiigehtchic (Arctic Red River) on the Mackenzie Flats in the Northwest Territories. The Anglican missionary Robert McDonald devised an orthography and translated the Bible (1886, 1898), the Book of Common Prayer, and hymns which were read by speakers. He published a grammar and dictionary in 1911. A revised orthography was introduced in a dictionary in Mueller 1964 and is now in use. Texts with free translation are in Peter 1975a,b, 1978, 1979, 1980, 1992, Williams & Gabriel 1975a,b, Herbert, Pfisterer, & Peter 1981, Tritt-Frank 1989, and Mishler 1995. Dictionaries of the Eastern Fort McPherson dialect are in Ritter 1976a and Firth 1991. Placenames are examined in Ritter 1976b and Caulfield, Peter, & Alexander 1983. Leer 1996a unravels the complex history of stem shape.

Upper Kuskokwim, also called Kolchan or McGrath Ingalik, has about 40 adult speakers at Nikolai, Telida, and McGrath. First recorded by Krauss in 1961, it was earlier considered part of Ingalik and is partly intelligible with Lower Tanana, from which it has been separated since the late 19th century. A dictionary is in Collins & Collins 1966, and stories from various Athabaskan languages translated into Upper Kuskokwim with free translations are in Petruska 1990a,b,c,d,e,f,g,h,i,j,k.

Lower Tanana (also called Tanana), is spoken by about 30 elders along the Tanana River. One dialect group includes the lower bands Minto-Tolovana, Toklat, Nenana, and Wood River. A second dialect, Chena, was spoken until 1976. A noun dictionary is in Krauss 1974, practical orthography and placename list with tape in Kari 1991, text on basket-making in Titus & Titus 1991, a Christmas story in John 1991, and traditional stories with interlinear translation in Charlie 1992. A third variety, Salcha-Goodpastor is considered a distinct language by Kari. It was last spoken in 1993. A

lexicon is in Moffitt et al. 1994, metrical structures are discussed in Tuttle 1992, and object prefixes are treated in Tuttle 1996.

Tanacross, formerly classified as a dialect of Tanana, has been considered distinct since 1974. It is spoken by the former Healy Lake-Joseph Village and Mansfield Lake-Ketchumstuk bands now mostly at Tanacross. There are about 40 speakers over age 30 in Tanacross village and 10 more in Dot Lake and Healy Lake (Gary Holton p.c. 1998). Children's stories are in Brean 1982a,b and Paul & Scollon 1980.

Upper Tanana is spoken by around 100 along the Tanana River in eastern Alaska and another 10 in Canada. Minoura 1994 recognizes five dialects: Nabesna, Tetlin, Northway, Scottie Creek, and Canadian. The phonology is described in Milanowski 1962. A school dictionary is in Milanowski & John 1979 and 17 stories in Tyone 1996.

Moving into Canada we come to Tutchone in the Yukon. There are two significantly different dialects or languages, each spoken by about 200 adults: Northern Tutchone (Mayo, Pelly Crossing formerly at Fort Selkirk, Carmacks) and Southern Tutchone (Aishihik, Champagne, Burwash Landing, Kluane and former Lake Laberge residents now living in Whitehorse). There are noun dictionaries for the Northern Mayo and Selkirk dialects (Ritter 1976c, Ritter, McGinty, & Edwards 1977), and a volume on toponyms with 8 travel narratives with free translation (Tom 1987).

Tahltan, Kaska, and Tagish are mutually intelligible but diverging dialects in the southern Yukon and northern British Columbia. Tahltan is spoken by fewer than 40 in the upper Stikine drainage (Pat Shaw p.c. 1992) at Telegraph Creek and Iskut. Kaska is spoken by 400 adults in the Dease and Liard drainages (Krauss p.c. 1998). Tagish territory lies around Bennett and Tagish lakes in northern British Columbia and the southern Yukon. One or two elderly speakers remain (Krauss p.c. 1998). The term Nahanni and variants have been used for this group, but they have also been used for Tahltan or Kaska alone or for a number of other Athabaskan groups. Little material has been published on the language. Tahltan stress and tone are investigated in Cook 1972a, and sibilant harmony in Shaw 1991. A discussion of phonology is in Nater 1989b, and a description of phonology and morphology is in Hardwick 1984.

Sekani is spoken in north central British Columbia at Fort Ware, Ingenika (Fort Grahame), and McLeod Lake, by perhaps 50 adults (1996). It forms a dialect complex with Beaver, but the area is in need of further mapping. Sekani phonology is described in Hargus 1987a, 1988a,b, and 1989a, compounding in Halpern 1991, and verbal prefixes in Halpern 1992. A dictionary is in Hargus forthcoming a. In Hargus 1989b, what had been earlier analyzed as a future prefix with possible progressive use is shown to constitute two different prefixes that occur in different positions. Arguments for the separation of conjugation and mode are in Rice & Hargus 1989.

Beaver is spoken in two separate communities, one in eastern British Columbia (Doig, Blueberry, Hudson Hope, Prophet River), the other in northwestern Alberta, (Horse Lakes, Clear Hills, Boyer River, Rock Lane) by approximately 300 adults (Dale Kinkade p.c. 1990). Goddard published a description of the language and texts (1917). More recently Story has published a description of phonology (1989a) and Randoja has discussed word formation and accompanying phonological processes (1990), as well as syllabification among the verb prefixes (1991).

Slave (Dene) is a dialect complex spoken in the Mackenzie River area of the Northwest Territories and northern British Columbia and Alberta. Several major groups are recognized and sometimes referred to as separate languages. Slavey or South Slavey (Slave proper) is spoken at Fort Liard, Fort Providence, Kakisa, Jean Marie River, Trout Lake, Nahanni Butte, Liidli Koe (Fort Simpson), and by some in Wrigley in the Northwest Territories; at Meander River, Chateh Lake, and Hay River in Alberta; and at Fort Nelson in British Columbia. Mountain, grouped with South Slavey, is spoken by some residents of Wrigley, at Tulit'a (Fort Norman), and at Ross River. Bearlake is in Deline (Fort Franklin), and Hare in Fort Good Hope and Colville Lake. Bearlake and Hare are sometimes grouped together as North Slavey (Rice 1989: 9). There are an estimated 3000 speakers of South Slavey and 900 of North Slavey (Krauss 1997), including children, though these figures may be high. References to early documentation of the language are in the surveys above. Especially important among these was the Oblate missionary Emile Petitot, who published a large number of works, in particular a dictionary with grammatical sketch (1876a) based on material primarily from Hare but also including some Slavey, Mountain, and Bearlake, as well as Chipewyan and Gwich'in (Loucheux). Fang-Kuei Li worked with Hare in 1929, and though his material was not published, it served as the basis of publications by Hoijer on phonology (1966a). A dictionary of Hare is in Rice 1978, and South Slavey in Howard 1977 and 1991. The 1991 dictionary includes appendices on grammar and dialects, charts of prefixes, and paradigms. A large volume of Dene texts from Northern Alberta, with interlinear and free translations, is in Moore & Wheelock 1990. A grammatical sketch of Hare is in Rice 1977a, and a monumental Slave grammar, with three Bearlake texts, is in Rice 1989. On more specific topics, discussions of phonology include Howard 1963, Rice 1976, 1977b, 1979, 1980, 1988a,b,c,d, 1990, 1992a, 1993a, with 1987a, 1991a, and 1992b on prosodic structure. Pepper 1985 shows the resistance to diachronic change of expressive vocabulary. Aspects of morphology are treated in Rice 1985a,b,c, 1987b, 1993b. In Rice 1989b, consequences are shown of the development of tonal patterns in Fort Nelson Slave, of British Columbia for analyses of syntactic structure. Arguments for the separation of the prefixes traditionally grouped together as 'mode', based on material from Slave and Sekani, are in Rice & Hargus 1989. The use of classificatory verbs is discussed in Rushforth 1991. Rice (1991b) presents evidence for two classes of intransitives and Saxon (1989a) argues that Slave is syntactially

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projected, with overt nominals as arguments rather than adjuncts. Rushforth 1981 discusses communication with in-laws, Rushforth & Gorbett 1989 relative clauses, DeLancey 1990 enclitics, and Rice 1986 direct and indirect discourse.

Dogrib (once called Thlingchadine) is spoken by nearly the full population of 2400, in the Northwest Territories between Great Bear Lake and Great Slave Lake at Rae, Rae Lakes, Snare Lake, Wha Ti (Lac la Martre), and Detah near Yellowknife. It was earlier considered part of the Slave dialect complex, and more fluent speakers could communicate to some extent with Slave speakers, but the two languages are not mutually intelligible to less fluent speakers. A sketch of verb morphology is in Davidson 1964, a grammar in Ackroyd 1982 and dictionary in Saxon & Siemens 1996. Phonology is described in Howren 1968, 1979 and Coleman 1976. Howren 1971 discusses the 'D-effect', a fusional process involving transitivity prefixes. The optative is treated in Howren & Coleman 1970, pronominal prefixes and agreement in Saxon 1984, 1986, 1989b, 1990, 1993, and Thompson 1993, and complements in Saxon 1998.

The earliest Athabaskan language to be documented was Chipewyan (referred to as *Montagnais* in early French documents) with six 18th-century vocabularies beginning in 1742 (Krauss 1982). The language is spoken in the Northwest Territories, Saskatchewan, Alberta, and Manitoba by about 4000 people of all ages. Many speakers are bilingual, especially in Cree. Early work includes dictionaries in Petitot 1876, Lemoine 1901, and Legoff 1916, a grammar in Legoff 1889, and preliminary analysis and texts in Goddard 1912a followed by a study by Li on consonants (1933a), a stem list (1933b), grammatical sketch (1946), and text (1964). A collection of 19 texts, dictated by Francois Mandeville and edited by Scollon with facing-page translations, is in Li & Scollon 1976. (Original interlinear translations were omitted.) A dictionary is in Elford & Elford 1981. Developments among the consonants in various dialects are taken up in Haas 1968a (with glossary), Rice 1978, Scollon 1979a,b, and Krauss 1982a. Vowels are discussed in Cook 1983a, and the nature of syllable weight alternations, somewhat obscured by phonological change, in Cook 1977. A description of the subject, aspect, and classifier prefixes in verbs is in Richardson 1964, the deictic *ts'e-* in Saxon 1993, and a grammatical sketch in Richardson 1968. Classificatory verbs are described in Davidson, Elford, & Hoijer 1963, Haas 1968, Carter 1976, and S. Rice 1998. Cook 1992b pulls together the functions of enclitic *=u* in conjoining clauses, marking yes/no questions, and enumerating. Carter 1975 is a full treatment of semantics, and Scollon 1977, 1985, and Scollon & Scollon 1979 examine aspects of discourse structure. The possibility is raised in Cook 1989a and 1995a that processes of simplification in obsolescing Chipewyan mirror the stages of natural acquisition.

Tsetsaut or Ts'ets'aut (Tsimshian for 'Athabaskan') was spoken around Portland Canal in British Columbia and Alaska. The only documentation of the language is a vocabulary recorded in 1894 by Boas at Kinkolith from two boys and an elderly man, only the last fluent (Boas & Goddard 1924b). It is not clear when it was last spoken; Barbeau mentioned a speaker who was alive in 1927. Despite the paucity of material, Krauss reports (1973a: 296-7) that the language has much to contribute to our understanding of the development of Athabaskan because of its phonological divergence. He proposes that the Tsetsaut migrated to the coast from the North, because the language shares certain phonological developments (stem-initial labial affricates, stem-final obstruent loss) with languages of that area. An investigation of the position of the language within Northern Athabaskan is in Tharp 1972.

Babine-Witsuwit'en, formerly considered a dialect of Carrier, is spoken in central British Columbia by about 500 (Hargus p.c. 1997). Dialects are Babine (Burns Lake, Babine Lake, Granisle), Takla, Witsuwit'en (New Hazelton (Hagwilget), Moricetown, Broman Lake, Grassy Plains), and Francois Lake. The language has also been called Babine Carrier and Northern Carrier. It shows an interesting phonological development (Story 1984, Cook 1989b, 1990) which significantly modifies the system. Vowels are laxed or pharyngealized after fortis consonants (aspirated stops, ejectives, and voiceless continuants): **i>ə, *æ>e, *ɔ>a, *u>o*. They are tensed after lenis consonants (plain stops, voiced continuants): **i>i, *æ>i, *ɔ>e, *u>u*. Furthermore, syllables with fortis onsets and pharyngealized vowels show higher tone than those with lenis onsets and raised vowels. The phonology of verbal prefixes is treated in Hargus 1991, a dictionary is in Patrick & Tress 1991, and phonology and morphology in Hargus forthcoming b. Hargus 1995 introduces literacy and contains 15 texts with literal and free translation.

East and south of Babine is Carrier proper, consisting of two primary dialect groups: Central or Upper (Stuart, Trembleur, and Takla lakes) and Southern or Lower (Prince George (Lheivli), Cheslatta (Saint Mary's Lake), Stellaquo, Fraser Lake, Stony Creek (Saik'uz), Kluskus, Nazko, Quesnel, Ulkatcho, Anahim Lake (Ulkatcho or Netcaut'in)). There are around 2000 speakers (Bill Poser p.c. 1994). A massive grammar and dictionary with texts was compiled by the missionary Morice (1932). In 1974, the Carrier Dictionary Committee, working with Richard Walker, published a dictionary with grammatical sketch. Basic phonology is laid out in Walker 1979. Syllable weight is discussed in Cook 1977, nasals in Cook 1985, tone in Pike 1986 and Story 1989b, and French loans in Prunet 1990.

The southernmost Northern language is Chilcotin, spoken around Williams Lake in south central British Columbia in 6 communities: Alexandria, Alexis Creek (Redstone), Anaham, Nemiah Valley, Stone, and Toosey. Dialect differences are small. SIL estimated the number of speakers in 1982 at 1200. Vocabulary from a language 150 miles to the south in the Nicola and Similkameen Valleys of British Columbia, recorded by Mackay, Dawson, and Teit, suggest that Nicola-Similkameen

constituted a dialect of Chilcotin (Boas 1895a, 1924a), though the data are too scarce for confirmation. Basic phonology and vocabulary are in King 1979; syllable structure is discussed in Cook 1977 and 1986a. A process of vowel pharyngealization or 'flattening' under the influence of adjacent consonants is described in Cook 1983b and 1993a. Tone is treated in Cook 1989c. Processes of language obsolescence are taken up in Cook 1989a, 1995a, and Pye 1992.

On the Plains just southwest of Calgary, Alberta, is the Sarcee community, where there are under a dozen fluent elderly speakers and perhaps another several dozen now in their 50s and 60s who can speak (Cook 1984). Cook reports that Sarcee has developed complex tone and retains some stem-final consonants lost in other languages. In 1915 Goddard published a collection of texts, which Cook notes (1984: 4) differ interestingly in style from material collected in 1922 by Sapir. Sapir's field notes resulted in a paper on pitch accent (1925a) then served as the basis for a study of verb stems by Li (1931) and one on nouns by Hoijer & Joël (1963). The next important work was by Cook. It includes a paper on lexical, paradigmatic, and syntagmatic tone (1971a), the recovery of a lost stem-initial consonant through sibilant harmony (1978a), the fate of phonology under obsolescence (1989a), and other phonological studies (1971b,c, 1977, 1978b, 1981). There is also a description of verb inflection (1972b), a note on copular sentences (1978c), discussion of numerals (1971d), and reconstruction of the development of number categories (1974). A full grammar is in Cook 1984.

Washington and Oregon were once home to an Athabaskan language, Kwalhioqua-Clatskanie. The Kwalhioqua consisted of two groups: the Willapa, who lived east of Willapa Bay in southwestern Washington, and the Suwal, who lived east of them, in the Chehalis River drainage. The Clatskanie, an offshoot of the Suwal, were south of the Columbia River in Oregon. Vocabularies were recorded by Hale in 1846, Anderson in 1854 or 1855 (Clatskanie), Gibbs in 1856, Wickersham in 1888, and Teit, Frachtenberg, and Curtis, all in 1910. Frachtenberg also recorded a text of about a dozen words without translation. Some of this material was published in Boas & Goddard 1924b. The language was gone by about 1930 (Melville Jacobs in Thompson & Kinkade 1990: 31). After careful study of all manuscript material, Krauss has concluded that the language had only partial affinity with Pacific Athabaskan (Krauss p.c. 1998).

The Pacific Coast Athabaskan languages extend from southern Oregon into northwestern California. A comparative survey of the languages is in Hoijer 1960. Krauss (1973a) notes that they differ more from the Northern languages than do the Apachean languages of the Southwest. They share some common innovations, but differences among them are deep, and Krauss concludes that they probably never constituted an undifferentiated linguistic unit (1973a). They fall into two groups:

Oregon and California. Most documentation remains unpublished. References to manuscripts are in Pierce & Ryherd 1964 and Parr 1974. The southwest Oregon groups were moved to the Siletz reservation in the 1850s.

The northernmost Oregon language, Upper Umpqua, diverges sharply from the other three. (Lower Umpqua, a dialect of Siuslaw, is genetically unrelated.) It was spoken inland along the upper Umpqua River and its tributary, the North Umpqua, near Roseburg. There is little published material. Wordlists were collected in the 19th century by Tolmie (Scouler 1841: 215-51), Hale (1846), and Gatschet (1877 ms 76, NAASI), and in the 20th by Harrington (1940 ms 4360, NAASI).

Tututni or Lower Rogue River consists of four primary attested dialects: Upper Coquille, Tututni, Euchre Creek, and Chasta Costa. Upper Coquille (Coquille, Flores Creek) was to the west of Upper Umpqua in the drainage of the Coquille River and its tributaries. Tututni (including Tututunne, Mikwunutunne, Joshua or Chemetunne, Sixes, Pistol River or Chetleshin, Wishtenatin or Khwaishtunnetunne) was centered around the mouth of the Rogue River and extended along the coast. The Chasta Costa or Illinois River dialect was to the west of Tututni near present Agness. In 1964 Pierce & Ryherd listed one remaining 88-year-old Flores Creek speaker, one 85-year-old Joshua speaker, three Euchre Creek speakers, and two Mikwunutunne speakers. While working with Takelma in 1906, Sapir lived with Wolverton Orton, a Chasta Costa speaker. Material he collected from Mr. Orton was worked into a description of phonology and morphology with text (1914). A sketch of Euchre Creek Tututni is in Golla 1976, based on fieldwork in 1962 and 1964. Mikwunutunne vocabulary tape-recorded from Miller Collins by Swadesh in 1953 and 120 Chasta Costa forms collected by Harrington in 1942 are in Landar 1977.

Galice and Applegate (Nabiltse) were very similar dialects spoken on Galice Creek, a branch of the upper Rogue River, and Applegate Creek respectively, in Takelma country. The last known Galice speaker was Hoxie Simmons, who died in 1963. Jacobs collected a large body of texts in 1933-4, one of which was published in 1968. Based on these texts and two months of fieldwork with Mr. Simmons in 1956, Hoijer produced a grammatical sketch (1966) and stem list (1973). Additional vocabulary was recorded from Mr. Simmons by Landar (1977). Manuscript vocabularies of Applegate by Anderson, Dorsey, Gibbs, and Hazen are listed in Parr 1974.

Tolowa is part of the Oregon group but extends from southern Oregon down into California. The Chetco dialect was spoken on the Chetco and Winchuck rivers near present Brookings, in Oregon. There were four known Chetco speakers in 1964 (Pierce & Ryherd). In 1935, Elizabeth Jacobs transcribed 17 Chetco texts from Billy Metcalf at Siletz. Two have been published, a flood myth with free translation in E. Jacobs 1968, and a legend with word-by-word and free translations in E. Jacobs 1977. The other Tolowa dialects are in California, the best-known at the Smith River

rancheria near present Crescent City, where there are perhaps 7 elderly speakers (Loren Bommelyn 1994). Smith River phonology is described in J. Bright 1964. Goddard collected extensive texts between 1902 and 1911, but these remain unpublished. Collins discusses syllable structure (1989) and reanalysis of inflected nouns (1985). Tuttle 1970 describes stress and length. The most fluent Tolowa elders are now gone, but Loren Bommelyn, who learned the language as a young man, has published materials (1984, 1989, 1995, 1997) with sections on placenames, kinship, counting, time, money, house parts, basketry, prayers, dance songs, and grammar.

Northernmost of the California group are the closely related Hupa and Chilula-Whilkut dialects. The Hupa occupy the Hoopa Valley along the lower Trinity River. One to two dozen Hupa elders are still fluent (Victor Golla p.c. 1996). The Chilula (or Bald Hills) were to the west along lower Redwood Creek, and the Whilkut to the south of the Chilula on upper Redwood Creek. Chilula and Whilkut are no longer spoken. Early 20th-century work on Hupa was by Goddard, who first lived at Hoopa as a lay missionary. His publications include a note on conscious word-making (1901), discussions of sounds (1907), pitch accent (1928), and morphology (1905), a grammatical sketch (1911a), and texts (1904). In 1927 Sapir collected 76 texts and compiled lexical and grammatical files, but these remain unpublished. Sounds are described in Woodward 1964. More recent is work by Golla: studies of noun stems (1964b), verb stems (1977a), texts (1977b, 1984b), a practical grammar (1985), longer grammar (1970), and longer sketch (1996a). Most Chilula and Whilkut material is unpublished; Goddard collected extensive lexical material and texts in each. Chilula material is in Loud 1918: 234-5, 253-5, 259-65, 290-2, and Goddard 1914a,b.

To the south, around Cape Mendocino, were the Bear River people along the Bear River, and the Mattole along the Mattole River, who spoke mutually intelligible dialects. Goddard published Bear River vocabulary in 1929, when only one elderly speaker remained. Li published a grammar with vocabulary and text (1930) based on work with one of the last speakers of Mattole.

East and south of Mattole, along the drainage of the Eel River, was a set of dialects consisting of Nongatl (Van Duzen River, Upper Mad River), Sinkyone (Lower Eel River, South Fork of the Eel), Lassik (Middle Eel River), Wailaki (Upper Eel River) and Cahto or Kato. Golla (p.c. 1996) notes that Kato was beginning to emerge as distinct. All of these dialects may have disappeared by the end of the 20th century. No Nongatl material has been published, but Goddard collected 40 Nongatl texts with interlinear translation (Kroeber 1967). Nearly the same can be said of Sinkyone, and Lassik; Goddard filled numerous notebooks for each with vocabulary, texts, and notes. He did publish 36 Wailaki texts with literal translation, recorded at Round Valley in 1901 and 1906 from Captain Jim (1921-3). In 1927 Li collected 24 texts at Round Valley from John Tip, two of which appear, edited and with notes, in Seaburg 1977a,b. More was published on Kato, the southernmost California Athabaskan dialect. A grammar is in Goddard 1912b and texts in Goddard 1909. About 325 Kato words with Lassik counterparts appear in Essene 1942: 85-8.

The third major Athabaskan division is Apachean: Navajo, Western Apache, Chiricahua, Mescalero, and Jicarilla in the Pueblo Southwest, and Lipan and Plains Apache or Kiowa-Apache on the Plains. The languages are very similar, and appear to represent a common migration out of the north, distinct from that of the Pacific Coast Athabaskans. An important early comparative study is in Hoijer 1938a, supplemented in 1963 and 1971a. Hoijer also produced comparative studies of tone (1943) and verbal morphology (1945a, 1946b,c, 1948, 1949c). Stress patterns are compared across the languages in Landar 1980, and handling verbs in Liebe-Harkort 1984. Huld 1985 argues for the distinctness of Plains from the fate of palatals. Young 1983 provides a useful survey. Liebe-Harkort 1980 describes language maintenance.

Navajo is spoken over a large area in Arizona, New Mexico, and Utah. There are more speakers of Navajo than of any other North American language, over 100,000, though fewer children are now learning the language each year. There is an immense volume of published material on and in the language. Of monumental significance is the dictionary with grammar in Young & Morgan 1980, revised in 1987; this 1500+ page work alone would make Navajo one of the best documented languages of North America. Early work included texts by Goddard (1933) and important documentation by Sapir, which resulted in the publication of texts (1942) and a description of phonology and morphology (Sapir & Hoijer 1967, reviewed at length in Krauss 1970). Two puns are in Sapir 1932, a note on relativization in 1923b, and his famous 'Internal linguistic evidence suggestive of the northern origin of Navaho' in 1936. Hoijer's additional work on Navajo includes a phonology (1945c), a dictionary (1974), and studies of lexical categories (1966), semantics (1951, 1959), 'reference' or pro-verbs ('do so') (1968), and internal reconstruction (1969). The Franciscan missionary Berard Haile, who also worked with Sapir, published grammars (1926, Haile 1941-8) texts (1984), and dictionaries (Franciscan Fathers 1910, 1912, Haile 1950-1). The collaboration of Robert Young and William Morgan has been extremely fruitful, resulting in an early grammar with dictionary (1943), a description of particles (1948), and colloquial lexicon (1951). Gladys Reichard contributed important work, including studies of agency and causation with Bittany (1940), dialect variation (1945a), aspiration (1958), verbal morphology (1949), and a grammar (1952). Herbert Landar has studies on intonation (1959), morphology (1962, 1989), and syntax (1960a, 1961, 1962, 1966, 1967b). The status of stress is discussed in Hung 1959. Lexicographic work has dealt with ethnobotany (Wyman & Harris 1941, 1957), ethnoentomology (Wyman & Bailey 1964), anatomical terms (Werner & Begishe 1970), medical terms (Werner 1965), foods (Perchonock & Werner 1965), eating (Berlin 1967), personal

description (Ervin-Tripp 1967), and the universe (Werner & Begishe 1975). Landar's lexical studies cover terms for classificatory verbs (1963, 1965) and pain (1967c). All of the foregoing are discussed in Krauss 1973a.

More recently there has been a tremendous output of linguistic and pedagogical work on Navajo, too extensive to cover here. There have been studies, many major, on phonological and morphological structure (Saville 1968, Stanley 1969, Kari 1973, 1975, 1989a, Wright 1984, 1987, Hargus 1986, 1987b, McDonough 1990, 1996, Rice 1993a, Faltz 1998), aspect (Hardy 1979, Midgette 1995, 1996, Smith 1996), modality (Willie 1996), classificatory verbs (Garrison 1974), argument structure, reference, and obviation (Akmajian & Anderson 1970, Hale 1973, Creamer 1974, Frishberg 1972, Perkins 1978, Platero 1978, 1982, Woolford 1986, Sandoval & Jelinek 1989, Thompson 1989c, Willie 1992, Hale & Platero 1996, Jelinek & Willie 1996, Uyechi 1996, Kibrik 1993, 1996), word order (Perkins 1978), questions (Schauber (Kaufman) 1979), relativization (Platero 1974, Perkins 1982, Willie 1989), quantifiers (Speas & Yazzie 1996), various other syntactic topics (Elgin 1973, Kaufman 1974, Barss et al. 1989), discourse (McCreedy 1983, 1989), ritual language (Murray 1987, 1989), the lexicon (Iris 1984, Slate 1989, Young 1989, Young, Morgan, & Midgette 1992), world view (Witherspoon 1977, 1983), acquisition (Holm et al 1973, Saville-Troike 1996), and language shift (Canfield 1980, Fuller 1982). The *Analytical lexicon* of Young, Morgan, & Midgette 1992 provides a useful stem counterpart to Young & Morgan's 1987 dictionary, which is based on fully inflected words, at the request of speakers.

Western Apache is spoken in Arizona on the San Carlos and Fort Apache reservations. Five dialects are distinguished: San Carlos, White Mountain, Cibecue, Southern Tonto, and Northern Tonto. It is considered the most viable of the Apachean languages, with 12,000 speakers of all ages reported in 1982 (Young 1983: 400). The San Carlos and White Mountain dialects are compared in Hill 1964. Earlier records of the language include texts in San Carlos (Goddard 1919) and White Mountain (Goddard 1920). Grammatical descriptions of San Carlos are in Edgerton 1963 (a tagmemic analysis) and Durbin 1964 (a componential analysis). Shayne 1982 discusses the *yi-/bi-* alternation and Potter 1997 clause structure. Perry et al. published a dictionary with brief grammatical sketch in 1972. White Mountain phonology is treated in Greenfeld 1972, 1978, and 1984. Greenfeld 1973 presents an interesting case of a sound change in progress (**w* > **^{m}b* > *b/m*), in which the shift is slowed in words with special cultural significance. Playing card names are in Greenfeld 1971. A major dictionary is in Bray 1998. Basso has taken up various themes at Cibecue, with essays on body part terms (1967), classificatory verbs (1968), the role of silence (1970), a special writing system (1973), metaphor and figurative speech (1976), and placenames as cultural symbols (1984, 1988) all reprinted in 1990, and essays on landscape (1996).

Chiricahua and Mescalero, both now spoken on the Mescalero reservation in southeastern New Mexico, are mutually intelligible. Chiricahua territory once covered large areas of Arizona, New Mexico, and Mexico, but after being forced to surrender to the U.S. Army in 1886, the Chiricahua were taken to Florida, then Alabama, and finally Oklahoma. In 1913, two-thirds of them chose to join the Mescalero, while the other third accepted allotments in Oklahoma and became known as the Fort Sill Apache. The BIA counted 5 speakers at Fort Sill in 1981, all over 50 (Young 1983: 400), and about 1800 Chiricahua and Mescalero speakers combined, of all ages, at Mescalero. Three-quarters of the children entering school at that time knew the language. Both Chiricahua and Mescalero texts, with grammatical sketches, are in Hoijer 1938b. Classificatory verbs are described in Hoijer 1945b and Rushforth 1991. A full grammatical sketch of Chiricahua is in Hoijer 1946d. Pinnow published a Chiricahua grammar in German, with a text and appendices on kinship terms and warpath language, in 1988. Loans from Spanish are discussed in Hoijer 1939 and warpath language is described in Opler & Hoijer 1940.

The Jicarilla occupy a reservation in northwestern New Mexico. There are about 300 fluent adults and perhaps another 500 who know some of the language (Dagmar Jung p.c. 1994). Texts are in Goddard 1911b. Landar 1976 explores classificatory verb categories with verbs of eating. Sandoval 1984 examines the famous *yi-/bi-* distinction.

Lipan is a Plains language, but was spoken in 1981 by only 2-3 elderly women at Mescalero (Scott Rushforth cited in Young 1983: 400). A Lipan text appears in Hoijer 1975, but little else has been published on the language.

Plains or Kiowa-Apache, by far the most divergent of the Apachean languages, is spoken in Caddo County in western Oklahoma. Only 3-4 speakers remain (de Reuse 1998). Grammatical descriptions are in Bittle 1956 and 1963. Discussion of the *yi-/bi-* distinction is in Liebe-Harkort 1985.

Related to the Athapaskan group as a whole is the Eyak language, earlier spoken on the south coast of Alaska around the Copper River from modern Yakutat to Cordova. Only one speaker remains, who was born in 1918. The language was known early to the Russians, who collected 6 vocabularies in the 19th century. About 500 words were recorded by anthropologists Reynolds and de Laguna (Birket-Smith & de Laguna 1938). Vocabulary, grammatical material, and texts were collected by several others, principally Harrington in 1940, Li in 1952 (which yielded 'A type of noun formation in Athapaskan and Eyak' (1956)), and Austerlitz in 1961. But the main documentation was done by Krauss during the 1960s. It has appeared in published form in a preliminary description (1965a), a set of texts (1982b), and as part of comparative work on Proto-Athabaskan-Eyak-Tlingit (1964, 1965b, 1968, 1969), and in Leer 1991a. A 4000-page dictionary and 912-page text collection remain essentially unpublished, reproduced in 1970 at MIT.

Athabaskan-Eyak is related in turn to the Tlingit language, spoken by about 500

adults in southeastern Alaska from Yakutat to Dixon Entrance, and another 75 in interior British Columbia and the Yukon. Major dialects are Northern Tlingit (with subdialects Greater Northern, Far Northern in Haines, Yakutat and Hoona, and Interior in Atlin, Teslin, and Carcross), Transitional Southern Tlingit (in Kake, Wrangell, and Petersburg), Sanya-Henya Tlingit (from Ketchikan to Klawock), and Tongass. Transitional, Sanya-Henya, and Tongass together comprise Southern Tlingit (Leer 1991). The earliest extensive record of the language is in vocabularies collected by Russians during the 19th century and a grammatical sketch by Veniaminov (1846). The consonant inventory and verb paradigms are in Kelley & Willard 1905. Swanton published a volume of texts in 1909b and a preliminary grammatical sketch in 1911a. Boas, working with his student Louis Shotridge, produced the first adequate description of any Tlingit phonology and much of the verb morphology (1917). Early acoustic analysis, with text, is in Miller 1931. Velten published texts (1939, 1944). In 1966 Story completed a more complete analysis of morphology and Naish of syntax. Together they compiled a noun dictionary (1963, revised 1976) and a verb dictionary (1973). Pinnow, working chiefly from published sources, has produced a number of works, including historical studies of sound change (1966) and verb-stem variation (1968a). More recently, Leer has done considerable work, including treatments of stem variation and tonogenesis (Williams, Williams, & Leer 1978, Leer 1979), and tense, aspect and mood (Leer 1978 and especially 1991b, which contains extensive grammatical description). Dryer 1985 considers word order. A beginning pedagogical grammar is in Dauenhauer & Dauenhauer 1994a. Texts are in Williams, Williams, & Leer 1978 and Nyman & Leer 1993. Dauenhauer & Dauenhauer have also published important text collections with facing page translations and extensive annotation, as well as rich discussions of oral style and the social, cultural, historical, and linguistic context. The first (1987) contains 15 stories, the second (1990) 32 formal speeches, and the third (1994b) more than 50 life stories. Additional texts are in Dauenhauer & Dauenhauer 1995, Story 1995. Tlingit oral tradition is described in Dauenhauer 1975. The genetic position of Tlingit is discussed in Goddard 1920b, Pinnow 1962, 1964, and Hamp 1979b. Leer 1990 hypothesizes that it may represent a mixture of related varieties of pre-Tlingit.

The earliest European contact with Athabaskan speakers was at York Factory 1686, when Hudson's Bay Company men encountered some Chipewyan. In 1826 Gallatin (1836) recognized the relationships of the Northern Athabaskan languages and named them after Lake Athabasca. In 1841 Hale linked them to the Oregon group, and in 1852 Turner added the Southwestern languages (Krauss 1993). There has been good progress on reconstruction, including particularly Hoijer 1963, 1971b, described in some detail in Krauss 1973a, 1979, 1986, and summarized in Cook & Rice 1989a. (Krauss 1973a also contains an extensive bibliography of works on Na-

Dene lexicostatistics.) Hoijer did major work within Pacific Coast Athabaskan (1960) and Apachean (1938a, 1945a,b, 1946a,b, 1948a,b, 1949c, 1971). As early as 1914 and 1915 Sapir had noted regular sound correspondences and in 1931 set out tables of stem consonants in 4 languages representing the Northern, Pacific, and Apachean groups. Hoijer extended this work in 1938, and Krauss revised the system substantially in 1964. The reconstructed sound system appears in Leer 1979 and Krauss & Leer 1981, and is discussed in Cook & Rice 1989a, and Cook 1992. Proto-Athabaskan-Eyak has been treated by Krauss (1964, 1965b, 1968). Cook surveys Proto-Athabaskan phonology (1981) and examines approximants (1993b), and nasalization and syllable structure (1995b). Rice considers laryngeal features (1994) and the perfective (1995), Story 1989c first person plural, Saxon & Rice 1993 constituency, and Rice & Saxon 1993 syntactic change. Leer (1989) reconstructs directionals.

The family offers a number of features of special interest. Within phonology, especially intriguing is the development of tone from constricted syllables, syllables originally closed with glottalization. Tone is not reconstructed for Proto-Athabaskan-Eyak: Eyak, some of the Northern languages (Ahtna, Tanaina, Ingalik, Kolchan, Carrier, Babine), and the Pacific languages lack tone altogether. Other Northern languages and the Apachean languages show distinctive tone. Those with tone fall into two groups, whose tone patterns are often mirror-images of each other: where one language shows high tone, another shows low tone. Marked low tone appears among the Northern languages Lower Tanana, Upper Tanana, Han, Kutchin, Sekani, Dogrib, and Sarcee, and in Apachean; high tone appears in the Northern languages Tanacross, Slavey-Hare, Chipewyan, Beaver, and Chilcotin. The division is not purely areal: Sekani shows low tone, unlike all of its neighbors except Tahltan; Tanacross shows high tone, in contrast with all of its neighbors. There is even divergence within languages: the Southern Tutchone dialect shows low tone while Northern Tutchone shows high; the Tagish and Tahltan dialects show low tone, while Kaska shows high. Some of the languages have preserved the original triggering final glottalization and/or vowel constriction, while others have not.

There is also sibiliant harmony, whereby sibilants within a word match in point of articulation apical or palatal, in fluent speech. Thus Chiricahua *ć́é-má·s* 'he rolls out' is usually [ć́emá·s]; *ʔiɬ-ć́éš-dǫ́·* 'I straighten it' is usually [ʔiɬ ć́éšdǫ́ʔ] (Hoijer 1946d: 61). Tahltan harmony all coronals (Shaw 1991).

The templatic structure of the verb morphology has attracted considerable attention. The languages are primarily prefixing. Rather than being built up hierarchically in layers, the verb consists of a string of prefix slots or positions followed by a stem. Non-contiguous morphemes within the template frequently interact semantically to yield functions that would not be predictable from the sum of their parts. The prefixes fall into two sets phonologically. Those closest to the

stem, termed the conjunct prefixes, are tightly bound, subject to complex phonological processes. Those further from the stem, the disjunct prefixes, are more loosely bound. Special studies of the template and this division include Hymes 1956, Kari 1973, 1975c, 1989a, 1993, Speas 1984, 1987, Rice 1985b, 1991c, and Hargus 1991, 1994, 1997.

A topic that has long been of interest within Athabaskan are the classificatory verbs. The languages contain extensive inventories of verb roots, many meaning 'be located', 'move', or 'handle', that alternate according to the nature of the object located, moved, or handled. Thus Davidson et al. point out (1963: 30) that the Navajo verb stems *-ʔą́*, *-nìl*, and *-tsòòz* can all be used for the English 'money (lies) there': *béésò sìʔą́*, *béésò sìnìl*, or *béésò sìłtsòòz*. The stem *-ʔą́* is used for a single round solid object (a single coin), the stem *-nìl* for several discrete objects, such as a handful of coins, and the stem *-tsòòz* for clothlike objects, such as a dollar bill. Other studies on the classificatory systems of different languages include Hoijer 1945b, Haas 1967b, Henry & Henry 1965, Landar 1964, 1965, 1967a, Berlin 1967, Basso 1968, Krauss 1968, Witherspoon 1971, 1977, 1980, Lawson 1972, Garrison 1974, Carter 1976, Cook 1986b, and Rushforth 1991. Cook & Rice (1989a) note further the alternation of roots according to the degree of control or force involved, citing for example the Ahtna *-chu* 'handle cloth-like object' and *-ʔah* 'handle cloth-like object violently' from Kari. (A set of prefixes that appear immediately before the root, unfortunately termed 'classifiers', comprise a different system, marking causatives, passives, reciprocals, reflexives, etc. (Krauss 1969, Kibrik 1996).)

Aspectual distinctions are elaborate in the Athabaskan languages. Both the aspectual systems in the languages and the terminology used to describe them (often under the category 'mode') vary considerably. Sapir and Hoijer, for example, include under aspect momentaneous, continuative, repetitive, semelfactive, diversative, reversative, distributive, conative, and transitional, and under mode imperfective, perfective, progressive, iterative, and optative. Treatments of aspect are in Hardy 1979, Kari 1979 (Ahtna), Smith 1991, 1996, Midgette 1987, 1996 (Navajo), and Axelrod 1993 (Koyukon).

The syntactic status and function of pronominal prefixes within the verb has also excited considerable discussion. First singular and second person singular and plural subjects are specified by prefixes close to the verb stem, and objects somewhat further. Third persons are indicated with a variety of prefixes, among them two of the general shape *yi-* and *bi-*. The nature of the distinction between these two has been discussed in terms of active versus passive voice, animacy hierarchies, and discourse topicality. Contributions include Akmajian & Anderson 1970, Frishberg 1972, Hale 1973, Shayne 1982, Sandoval 1984, Sandoval & Jelinek 1989, Saxon 1984, 1986, 1989b, Liebe-Harcourt 1985, Hale & Platero 1986, Thompson 1989a,b,c, 1991, 1993, 1994, Willie 1992, Arces-Arenales et al. 1994, Jelinek & Willie 1996, and Uyechi 1996. Further discussion has centered on the syntactic status of pronominal prefixes and nouns in the languages, as syntactic arguments or as agreement (for prefixes) or adjuncts (for nouns). Work includes Plater 1978, Sandoval 1984, Speas 1986, 1990, Sandoval & Jelinek 1989, Saxon 1989, 1993, Willie 1989, Thompson 1993, Rice & Saxon 1994a,b, and others. Pertinent to the question of argument structure is the set of four 'classifier' prefixes that immediately precede the verb root and affect transitivity and voice among other things. Their phonological effects are discussed in Howren 1971 and Lamontagne & Rice 1995, and their semantic and syntactic effects in Saxon 1985, McDonough 1989, Rice 1991, and Kibrik 1993, 1996, as well as in the grammars.

Some of these structures can be seen in material from the Northern language Tanaina, drawn from Tenenbaum 1978 and cited in the practical orthography. The language has the usual large consonant inventory: plain obstruents *p* (spelled *b*), *t(d)*, *ƛ(dl)*, *c(dz)*, *č(j)*, *k(g)*, *q(gg)*, *ʔ(')*; aspirates *tʰ(t)*, *ƛʰ(tl)*, *cʰ(ch)*, *čʰ (ch)*, *kʰ(k)*, *qʰ(q)*; ejectives *t'(t')*, *ƛ'(tl')*, *c' (ts')*, *č'(ch')*, *k'(k')*, *q'(q')*; voiceless fricatives *ɬ(ɬ)*, *s(s)*, *š(sh)*, *x(x)*, *x̣(h)*, *h(hh)*; voiced fricatives *v(v)*, *l(l)*, *z(z)*, *ž(zh)*, *ɣ(ɣ)*, *ʁ(gh)*; and sonorants *m(m)*, *n(n)*, *y(y)*. Vowels are *ɪ(i)*, *ə(e)*, *a(a)*, and *ʊ(u)*. Tone is not distinctive.

Kinds of words include particles, postpositions, nouns, and verbs. Particles have no internal structure. Postpositions contain a pronominal prefix referring to their object. Noun morphology is relatively simple, often consisting of only a stem. The stem may be a simple root, a compound, or a nominalized verb. Possession is indicated by a prefix referring to the possessor. Alienably possessed nouns also have the suffix *-a*: *gech'* 'mittens', *sh-gech'-a* 'my mittens'. Plurality can be marked by collective suffixes: *ɬik'a* 'dog', *ɬik'a-qa* 'dog-s'; *du* 'Yupik', *du-tna* 'Yupiks'. Verbs, by contrast, show elaborate internal structure, and may serve alone as clauses.

The verbal morphology consists of a stem preceded by nearly 20 prefix positions. The basic shape of stems is CV(C). Each stem has imperfective, perfective, and future/progressive forms, which may vary in their vowel and/or final consonant: *daɬ/daɬ'/deɬ* 'handle plural objects'. These alternants combine in various ways with prefixes to yield a large inventory of aspects, including momentaneous (action at a single moment), durative (prolonged action), semelfactive (single act of possible series), seriative (series of discrete actions), repetitive (action consisting of unanalyzable repeated actions: 'dance'), stative (object at rest in certain place or position), neuter (qualities: 'be red'), transitional (becoming), progressive, continuative (serial, completed, punctual actions), metamorphic-reversative (transfer to another state or stage: 'wash', 'go and return'), and customary. Especially for verbs of position (sitting, lying) motion (falling, dropping), or handling (giving, carrying) different verb stems are chosen according to the shape, texture, and number

of objects involved. Eight categories can be seen: single compact objects (ball, trap, cap, cache, sun), long rigid objects or empty containers (bow, needle, boat), enclosed objects (knife, full sack, rolled sleeping bag), fabric-like objects (blanket, paper, open sleeping bag), objects in an open container (full bucket, sugar, water), mushy or sticky objects (mud, fish, meat), single animate objects (person, dog, doll), plural objects or rope (boots, dogs, balls). This system is crosscut by the qualifiers described below.

Immediately before the stem is one of the four (traditionally but infelicitously named) classifiers: *∅, d, ł, l*. Their precise functions are complex, but changes in classifier often affect transitivity, yielding causatives, benefactives, reflexives, reciprocals, middles, and passives. To the left of the classifiers are first and second person subject pronouns: *esh-* 'I' (*esh-chegh* 'I'm crying'), *n-* 'you' (*n-chegh* 'you're crying'), and *eh-* 'you all' (*eh-chegh* 'you all are crying'). Moving leftward again we find aspect markers, and again to the left, the semelfactive, also used for the perfective negative. Next are the qualifiers (thematic prefixes), which contribute important meaning to the verb, often interacting with stem selection in classifying entities. Among these are several of the shape *de-*, indicating the involvement of water (movement of water, travel on water, actions involving water such as making coffee); fire, light, or the sun; hand or tool; the foot or hand; the head or eye; the mouth or voice; sound; stiff objects (egg, plate, gossip), paper or fabric-like objects or hide (caribou skin mattress), or grass objects, tactile perceptions and color, taste, or cold; awareness or knowledge. Several others have the shape *ne-*: and indicate the involvement of the face or surface of the head; rope-like objects; birds or airplanes; small, round objects (eating berries, fish eggs, dentalium necklace, beads) or those made of flour (bread); feelings or judgments; travel by boat or vehicle; internal qualities. The negative *z-* appears with imperfectives, futures, and customaries. It cooccurs with the negative particle *nch'u* 'not' or *n'ugh* 'not yet' and a negative suffix *-l*: *nch'u zgheshyul* 'I'm not walking'. Preceding the negative is the inceptive *te-* ('begin'), which combines with progressive verbs to form the future. It can also indicate spatial extension: *h-te-nghalggux* 'it (rope) stretched'. To the left of the inceptive is the conative (or semitransitive) *i-*: *sh-i-dełqet* 'he asks me'.

Moving leftward again we find more pronouns, termed deictics. The indefinite subject *ch'e-* 'someone' is also used for 'we': *ch'e-chegh* 'someone is crying', 'we (2) are crying'. The indefinite *k'e-* 'something' serves as subject or object: *k'e-chegh* 'something is crying', *chi-k'-dałyuq* 'he killed something'. It can also indicate an unidentified agent in verbs with passive-like effect: *chi-k'-dałyuq* 'he got killed by something'('something killed him'). The prefix *qe-* 'it' indicates a spatial, temporal, or abstract subject or object: *qenq'a q-iz'un* 'it (a house) is located . . .'. A homophonous prefix specifies third person plural subjects: *tu-qe-zdatl'* 'they went up the mountain', *sh-q-izteł* 'they kicked me once'. Otherwise third person singular

humans acting alone, or in combination with first or second persons, are unmarked. To the left of these pronouns are the direct object pronouns *she-* 'me' (*sh-ghi'an* 'he saw me'), *ne-* 'you' (*n-qizteł* 'they kicked you once'), *dna-* 'us' (*nu-dna-qizgget* 'they stabbed us again'), and *nh-* 'you all' (*nh-iyeshteł* 'I kicked you all once'). The same position can be occupied by the reflexive *hu-* (*hu-stgget* 'he stabbed himself') or reciprocal *nił-* (*nił-ch'ut'an* 'we saw each other'). When third persons act on other third persons, special fused prefixes are used. The prefix *ye-* (termed disjoint anaphor by Saxon) indicates one person acting on another person or object: *ye-nazghet* 'he filled it', *ye-łni* 'she told him'. If a secondary participant like an animal or object acts on a person, the sequence *ve-ye-* is used: *vey-izteł* 'it kicked him'. The form *qey-* is used if the subject is third person plural: *chi-qey-dałyuq* 'they killed him'. If the object is plural, *qe-* is used: *qe-łni* 'he tells them', *chi-qe-hdałyuq* 'they killed them'. For plural objects with non-human or non-third person subjects, the prefix is *qev*: *qev-ch'ghi'an* 'we saw them'. These inner prefixes, termed conjunct prefixes, are more tightly bound to the stem phonologically than the next set, and show a smaller range of consonants and vowels.

Prefixes to the left of the conjunct prefixes, termed disjunct prefixes, are more loosely bound to the verb. The first disjunct prefix, immediately to the left of the pronouns, is the distributive *n-*. To its left may be an incorporated noun or verb stem. Most incorporated stems are nouns, many referring to body parts: *nu-nchix-gheyił* 'he's nosing around' (*nchix* 'nose'). Moving leftward again we find the iterative *nu-* which indicates repetition of an action or reversal of motion: *nu-yiłjeh* 'he hit her again'. To the left again is a set of over 65 adverbial prefixes. Among them are 51 directionals, such as *da-* 'into an open container' (*da-ghelgguk* 'I got into the boat'), *t'e-* 'partially underneath an outer layer' (*t'e-dughel'u* 'he had his nose under his arm', *diqi-* 'up through the smokehole' (*diqi-dnulen* 'he flew through the smokehole'), and *q'a-* 'mentally or psychologically penetrating' (*q'a-shdaniset* 'he looked at me and really figured me out, he saw right through me'). Other adverbials modify qualities, such as *ch'-* 'abnormally and culturally disvalued' (*ch'-qidednik'* 'he's lazy'). A few indicate manner, such as *chi-* 'playfully' (*chi-qel'ul* 'they're playing'). To the left of these adverbials is a set of around 100 prefixes traditionally termed postpositions because they function locatively or relationally much like English prepositions and must follow a noun or pronoun. Tenenbaum notes that while many are firmly attached to the verb and participate in regular phonological processes, such as *ghu* 'near' (*sh-ghu-nl'an* 'keep up with me') others may be separated, such as *-eghdeq* 'above' (*q-eghdeq hjenghełtlet* 'he jumped over them'). Finally, position 19, at the beginning of the verb, contains pronominal objects of the prepositions, like the *sh-* 'me' in *sh-ghu-nl'an* 'keep up with me'. These pronouns are generally similar in form to the object pronouns of position 13 and the possessive prefixes on nouns.

The verb may be followed by desiderative or nominalizing enclitics. There are positive and negative desideratives: *ch'uqat=ni* 'let's eat!', *coffee tuch'k'delay=a* 'Don't make coffee.' Nominalizers include *=en* 'the person that' (*dghishin=en* 'the pretty one'), *=na* 'the people that' (*tusdatl'=na* 'those that went up the mountain'), *=i* 'the thing(s) that' (*nunejeh=i* 'the thing that flies' = 'airplane'), *=t* 'the place/time that' (*nushdultan=t* 'the place I was born'), and *=ch'* 'the way that' (*t'ech'qulah=ch' hqisen* 'there's no way to fix it').

Some of these structures can be seen in the excerpt below from a text recorded and analyzed by Tenenbaum (1984): Stories of the wars they had before our time. Like other languages of the family, Tanaina shows basic verb-final order (SOV), with postpositions.

Ts'anhdghulayał	*hyegh*	*nuqulnix*		*htsast'a.*
Ts'anhdghulyał	*qey-egh*	*nu-qe-ghe-l-nix*		*qe-tsas-t'a*
name	him-about	ITERATIVE-it-PRF-CLASSIFIER-tell.stories		it-about-be

'A long time ago they used to tell stories about Ts'anhdghulyał.

Dutna	*ełа*	*la'u*	*k'ughun*	*nił*	*t'qul'an*	*ghu.*
du-tna	*ełа*	*la'u*	*k'ughun*	*nił-ł*	*t'e-qe-ghe-i-l-'an*	*ghu*
Yupik-PL	with	always	war	RECIP-with	thus-PL-PRF-PRF-CL-do	then

The Indians and the Eskimos always used to wage war with each other.

Ts'anhdghulyał	*gun*	*Dena'ina*	*ezhge'a*	*gheli*	*ghila'.*
Tsanhdghulyał	*gu-n*	*Dena-'ina*	*ezhge-'a*	*gheli*	*ghe-i-∅-la'*
name	this-NOM	person-PL.HU	hero-POSS	really	PRF-CL-be

Ts'anhdghulyał was the greatest Tanaina hero.

Ey	*ki*	*yun'e*	*Qizhjeh*	*gu*	*ey*	*hdalts'i*
ey	*ki*	*yun'e*	*Qishjeh*	*gu*	*ey*	*qe-de-z-l-ts'i*
then	again	up.the.lake	name	this	there	PL-GENDER-PRF-CL-PL.sit

At one time they were living up Lake Clark at Kijik.

ki	*q'u*	*hva*	*itałqun*	*idi*	*ełа*
ki	*q'u*	*qev-a*	*i-te-z-ł-qun*	*idi*	*ełа*
again	now	3.PL-on	SEMELFACTIVE-INCEPTIVE-PRF-CL-dawn	when	with

At dawn one morning

k'ughun	*ełа*	*Dutna*	*guna*	*qegh*	*hnidatl'.*
k'ughun	*ełа*	*Du-tna*	*gu-na*	*qe-egh*	*qe-ne-i-∅-datl'*
war	with	Yupik-PL.HU	that-PL.HU	PL-to	PL-PRF-CL-PL.go

the Eskimos came there to attack them.

T'anch'q'u	*n'ushna*	*ghuna*	*t'anch'q'u*	*ts'ił ten*	*qevteh*	*hnudilt'a'.*
T'anch'q'u	*n'ush-na*	*ghu-na*	*t'anch'q'u*	*ts'ił ten*	*qev-teh*	*qe-nu-de-i-l-t'a'.*
all	man-PL.HU	that-PL.HU	all	bow.&.arrow	PL-among	PL-on-G-PRF-CL-be

All the men were armed with bows and arrows.

Nił'iqu	*k'ehteldex*	*ghu*
nił-iqu	*k'e-qe-te-l-dex*	*ghu*
RECIPROCAL-pointed.at	INDEF-PL-extension.in.space-CL-shoot.arrow	at.that.time

They were shooting arrows at each other.

T'qet'an	*t'qet'an*	*ch'q'u.*
t'e-qe-d-'an	*t'e-qe-d-'an*	*ch'q'u*
thus-PL-CL-do.DURATIVE.IMPRF	thus-PL-CL-do.DURATIVE.IMPRF	and

They kept on and kept on.

Ts'anhdghulyał	*ghunhdi*	*yuyeh*	*ztan.*	
Ts'anhdghulyał	*ghu-n-hdi*	*yuyeh*	*z-∅-tan*	
proper name	DEM-HU.SG-as.for	inside	STATIVE.IMPRF-CL-handle.anim.obj-STATIVE	

As for Ts'anhdghulyał, he was lying down inside.

Idi	*ełа*	*hyegh*	*ndunu'iltlet*	*łu.*	*"Qil.*	
idi	*ełа*	*qey-egh*	*ndu-nu-ne-i-l-tlet*	*łu*	*qil*	
and	then	they/him-to	into.house-ITER-PRF-PRF-CL-jump.MOM.PRF	HEARSAY	bad	

They ran back to him. "It's no good!

Nach'	*gheli*	*q'u*	*qudeł*	
dna-ch'	*gheli*	*q'u*	*qe-ghe-∅-deł*	
us-towards	really	now	PL.DEICTIC-PROG-CL-PL.subjects.go.PROG.IMPRF	

They're heading right for us!

Nen	*kitsa*	*qeveł*	*tiniyux",*	*qeyłni*	*łu.*
nen	*kitsa*	*qev-ł*	*ti-ne-n-∅-yux*	*qey-ł-ni*	*łu*
you	next	them-to	out-PRF-2SG-CL-SG.go-MOM-IMPRF	3SG.DAT-CL-say.DUR	

You go out there and challenge them", they said to him.'

Beothuk*

The Beothuk, who inhabited present Newfoundland, were first mentioned in accounts of the 1534 voyage of Jacques Cartier. Early contacts with Europeans were cordial, but during the 17th and 18th centuries there were increasing conflicts and the Beothuk were pushed into the interior. By 1823 only 14 people remained. The last known survivor, a voluntary captive named Shanawdithit or Nancy April, died in 1829.

Early accounts of contacts and reports on language, culture, and archaeology are reprinted in Howley 1915. A survey of history and culture is in Reynolds 1978. Sources on the language are described in Hewson 1968. There are four vocabularies, containing in all over 400 items, but no connected speech. They were recorded by:

1. John Clinch of Trinity from an unknown speaker during the 18th century
2. John Leigh of Twillingate from Demasduit (Mary March), captured in 1819
3. King, of unknown origin
4. W. E. Cormack from Shanawdithit, captured in 1823.

The vocabularies have been copied and reprinted on a number of occasions, resulting in the introduction of numerous errors. The lists and copies are published together, with photographic reproductions, in Hewson 1978. An appendix contains an amalgamation of entries from all sources for each word.

In 1911 Speck found a woman named Santu, said to be the daughter of a Beothuk man and Micmac woman (Speck 1922). She provided words, but none correspond to earlier recordings, so it is unclear whether the language was in fact Beothuk.

Possible genetic affiliations with other languages have been discussed, most often with the neighboring Algonquian languages. While Latham (1862) saw resemblances, Gatschet (1886a) examined the evidence and found it invalid. Powell accepted Gatschet's arguments and listed Beothuk as a language isolate in 1891. Voegelin & Voegelin 1946 find the proposed similarities too close to represent cognates, noting that they could be loans. Hewson 1968, 1971, 1978 offers possible similarities between Beothuk words and Proto-Algonquian reconstructions. Unfortunately the poor and fragmentary quality of the documentation renders the possibility of ever finding reliable evidence of a relationship unlikely (Goddard 1979).

Samples of the language can be seen in the following words cited from Hewson. Numbers in parentheses indicate the source from the above list: *gathet* (2), *yazeek* (4) 'one'; *nunyethick* (3) 'five'; *bigadosik* (2), *beshed* (3), *bashedtheek* (4) 'six'; *mudty* (1), *maudee, mattik, muddy* (3), *mudti, mudty* (4) 'bad'; *pugathuse* 'beating' (1), *bukashowite* 'to beat' (2), *bogathoowytch* 'to kill' (3); *adothe* (2), *ode-othyke, adothe* (4) 'boat'.

CADDOAN FAMILY

SOUTHERN CADDOAN
- **Caddo**: *Kadohadacho, Hasinai, Natchitoches*

NORTH CADDOAN
- **Wichita**: *Wichita proper, Waco*, Towakoni**
- **Kitsai = Kichai***
- **Pawnee**: *South Band, Skiri = Skidi = Wolf Band*
- **Arikara = Ree**

Caddoans were encountered as early as 1541 by DeSoto in present Arkansas and by Coronado in present Kansas. Caddo, Wichita, and Pawnee are now spoken in Oklahoma, and Arikara in North Dakota, each by a very few elders (Wallace Chafe, David Rood, and Douglas Parks, p.c.). Good overviews of the family are in Taylor 1969a and Chafe 1973, 1976, 1979, and 1993a. Modern relations among the languages are the result of the successive splitting off of single groups, first the most divergent Caddo, then the Wichita, then the Kitsai, and finally, 300-400 years ago, the Arikara from the Pawnee (Parks 1979). Pawnee and Arikara are close but no longer mutually intelligible (Parks 1976: 2). The possibility has been raised that Adai, a language known only from a wordlist recorded by Indian agent John Sibley in 1804, could be part of the family as well, but there is insufficient evidence to establish a relationship. The internal structure of the family is laid out in Lesser & Weltfish 1932, and the first work on systematic reconstruction of Proto-Caddoan phonology is in Taylor 1963a,b, further developed with comparative morphology in Chafe 1977b and 1979. Pursuit of a possible remote relationship between Caddoan and Keresan, suggested by Swadesh in 1967, has yielded few results (Rood 1973a, Davis 1974). Possible links to Iroquoian and in turn to Siouan continue to be explored. (See Macro-Siouan stock, section 6.3.)

At contact the Caddo comprised a number of bands, including the Kadohadacho along the Red River and tributaries in present Arkansas and Louisiana, the Natchitoches on the Red River in central Louisiana, and the Hasinai along the Sabine, Neces, Trinity, and Brazos Rivers in eastern Texas. In the 19th century the bands were brought together in Texas, and in 1859 they fled to Oklahoma, where they settled around modern Anadarko, Binger, and Fort Cobb (Chafe 1983b). Chafe notes that earlier dialect differences can still be discerned (1976: 12). Vocabularies were recorded in 1687 by LaSalle and in the 19th century by Sibley (Claiborne-Mason 1879), George Gray (Gallatin 1836: 307-67, 383-97, 409-13), Captain Randolph Marcy (Schoolcraft 1853: 709-12), Lieutenant Amiel Weeks Whipple (1856: 70), and James Mooney (1896: 1102-3). Kinship terms are discussed in Spier 1924a. More recent grammatical description can be found in Chafe 1976 (general structure), 1992 (pronominal reference), 1995 (realis and irrealis), and forthcoming (sketch with text).

Pronominal case is discussed in Mithun 1991 and verb morphology in Melnar 1998. Additional texts are in Chafe 1977c.

The Wichita were noted first in present Kansas and subsequently in Texas and Oklahoma. The language is now spoken by a handful of elders in the area around Gracemont and Anadarko, Oklahoma. Early vocabularies were recorded by Marcy (1853: 307-8, Schoolcraft 1953: 709-11) and Whipple (1856: 65-8 of the Waco dialect), Edward Curtis (1907-30: 230-7), and Spier (1924). In 1949 Paul Garvin collected material including kinship terms (Schmitt 1952) and produced a phonemic analysis (1950). David Rood has published grammars (1976, 1996), texts (1977a), and descriptions of case (1971), subordination (1973b), and the copula (1998). A note on phonology is in Vincent 1978.

The earliest encounters with the Kitsai were in present Texas. In 1858 they joined the Wichita in Oklahoma. The last speakers of Kitsai also spoke Wichita. The last fluent speaker, born before 1850, died around 1940. An early vocabulary is in Whipple (1856: 65-8). Material collected by Alexander Lesser in 1929 and 1930 formed the basis of a phonological description (Bucca & Lesser 1969) and texts (Lesser 1977).

Pawnee consists of two major dialects, South Band, spoken by the Chawi, Kitkehahki, and Pitahawirata bands, and Skiri. The Pawnee were met by French explorers in the early 18th century around the Platte River in present Nebraska. They now live around Pawnee, Oklahoma. The earliest vocabulary was collected on the Lewis and Clark expedition in 1804-5, followed by additional wordlists by Thomas Say (Thwaites 1904-7: 17.29-8, 304, Gallatin 1836: 307-67), Wied (1839-41: 2.630-2, Thwaites 1904-7: 24.293-4), Thomas Hamilton (Hayden 1863:.347-51), William Hayden (1869: 390-406), and Morgan (1871: 293-382). Plant names appear in Gilmore 1912. Dunbar published a grammatical sketch (Grinnel 1893: 409-37) and songs are in Fletcher 1902, Densmore 1929, and Murie 1981. Texts are in Weltfish 1936 (with analysis) and 1937. Additional texts are in Parks 1977 and a full grammar in Parks 1976.

Since contact the Arikara have moved north from South Dakota into North Dakota, ultimately settling on the Fort Berthold reservation. Early vocabularies appear in Wied 1839-41: 465-74 and Thwaites 1904-7: 24.210-4, Catlin 1841: 2.262-5, and Hayden 1862: 356-63. More recent are a grammatical description in Merlan 1975, a teaching grammar in Parks, Beltran, & Waters 1979, a student dictionary in Parks 1986, and texts in Parks 1977b, Taylor 1977, Parks, Jones, & Hollow 1978, Parks 1984, and especially Parks 1991, a monumental collection in four volumes.

The languages offer a number of points of special interest, with their complex phonological processes (especially Caddo and Wichita) and elaborate morphological structure. They show extensive affixation and productive noun incorporation. Pronominal prefixes follow an agent/patient pattern. Some of these structures are illustrated here with material from Pawnee, drawn from Parks 1976. Analyses are his.

The Pawnee phonological inventory is small, with consonants *p, t, k, c, s, w, r, h,* and vowels *i, e, a, u*. Vowel length is distinctive.

Parks recognizes three kinds of words: nouns, verbs, and particles, on the basis of morphological structure. Noun stems may be simple roots, compound (*rikis-i:ru* 'corn-hay' = 'oats', *itkas-kiriru* 'sleeper-trembling' = 'owl (sp)'), or derived from verbs (*kawiriwu* 'to paddle', *kic-kawiriwu* 'oar'; *apak* 'to fight', *ra-:paku* 'a fighter'). A number of noun stems are dependent, never occurring alone as words. They appear only in compounds or followed by a suffix. The root *asa:-* 'horse', for example, appears in compounds like *asa:-ka:tit* 'black horse' or followed by a suffix with little discernible meaning: *asa:-ki* 'horse'. There is only one nominal prefix, a feminine prefix *c-*: *c-ku:ruks* 'she-bear'. Women's names generally carry this prefix. A nominal suffix *-u* occurs with most nouns when they are not qualifiers in compounds or followed by other suffixes: *ki:c-u* 'neck' (but *kic-ke:ac* 'to have a long neck'). The suffix *-kat* is a locative 'among, in, on': *kic-kat (tatu:kitaku)* '(I'm sitting) above the water'. The suffix *-hiri* serves as both a locative and instrumental: *paks-iri* 'on the head', *(tactat) riks-iri* '(I shot him) with an arrow'. The locative *-ru* 'among, in . . . country', is used with tribal and geographic names: *sahe:-ru* 'in Cheyenne country'. There is an augmentative *-ku:cu* (*re:ciki* 'knife', *reci-ku:cu* 'butcher knife') and diminutive *-ki(s)* (*re:cu* 'intestine', *recki* 'small intestines'), though its diminutive force is not always evident in the nouns in which it occurs, as in 'horse' above. A special suffix *-ku:ku* is used for coverings: *paks-ku:ku-ʔu* 'head-covering' = 'hat'.

Verb stems may also be simple or complex. Elements within the stem may include an iterative prefix: *kacak* 'to stick, prick', *rah-kacat* 'to hack, stick repeatedly'. A portative prefix added to motion verbs indicates carrying: *at* 'to go', *rat* 'to take'; *hak* 'to pass by', *rahat* 'to pass to, hand over'. A large set of prefixes indicate location, position, and direction. Thus the prefix *ta-* 'suspended', for example, appears in *ta-wiru:tit* 'to bear (fruit)', *ta-rikut* 'to pick', *ta-wu* 'to hang up', and *ta-kusta* 'to carry on back'. The prefix *iri-* 'in a horizontal position' combines with the root *ka:cu:* 'to urinate' yielding *iri-ka:cu* 'to wet the bed'. Other locative prefixes contribute such meanings as 'upright', 'boundary/edge', 'in front', 'in the middle', 'on a horizontal (bounded) surface, in timber or brush', 'against, on a vertical surface, in the throat', 'behind', 'in', 'on, on top of', 'on the end, on the buttocks', 'suspended', 'together, next to', 'head in bowed position', 'in a direction above a surface', 'against, adhering to', 'vertical circular motion', 'around, in circular direction', 'out of an enclosed area', 'in the water', 'inside', 'over a surface, over water', 'inside, in the mouth', 'at a point, covering', 'in (vertical) circular direction', 'in a horizontal position', 'out of sight', 'curved, bent', 'close to, beside', 'around, in a circle', 'in a line, straight', 'in a line, row', 'up, over, beyond', 'vertical position', 'at or to a point', 'slanting, oblique position'. Multiple locative prefixes may co-occur: *-kata-iri-* '-against-in.horizontal.

position, in *ri-kata-iri-itik* 'to hold in one's bosom'. Distributives spread events and states over space or time. One of these, *-wa:-*, is sometimes a prefix (*wa:-wari* 'to go about all over'), sometimes a suffix (*kaksa-wa* 'to call around') and sometimes an infix (*hi-wa:-hit* 'to be spread around'). There are several causative suffixes: *ki:ka:* 'to drink', *ki:ka:-rit* 'to water'. Two other transitivizers are a preverb *ut-* and a suffix *-k*: *wic-at* 'to-go' = 'to arrive', *ut-wicat* 'to attack'; *rasahat* 'to grow up', *rasahat-k* 'to rear'.

Compounding is highly productive. Compounds may consist of two verb stems: *rikuks-takut* 'carry-run' = 'run off with', *ra:wi:r-takuk* 'angry-run' = 'run angrily', *kikaks-ku* 'cry-sit' = 'sit crying', *kaksa?us-at* 'yell-go' = 'yell while going'. They may contain a noun + verb (noun incorporation): *aciks-urahac* 'thought-disappear' = 'forget', *as-awiat* 'foot-jump' = 'step over, pedal', *ut..kirik-pi:tit* 'eye-sit.down' = 'look at'.

Verb stems are in turn combined with markers of mode, pronominal prefixes referring to core arguments, aspect, subordination, and more. Mode distinctions include an indicative *ta-/ti-*, negative indicative *ka:ka:-/ka:ki:-*, assertive *re:-* (. . . *re:-sukca* '[Oh that's what you want;] you just lie there!'), the imperative often followed by the jussive *-uks-* (*sukspi:tit* 'sit down!', *ru:-r-uks-a* 'let him eat it!'), the contingent *(r)i-* (. . . *i-tira:wicra:wa?a* [I'm going to go in] and I'll start cooking'), the potential *kus-i-/kas-i-* (*para kas-i-at* 'you could have gone'), the absolutive *ra-* used with interrogatives, evidentials or deixis (*iri-ra-:rit riwit* 'There's a skunk'), the subjunctive *a:-/i:* for irrealis (*ku?ahra:riktis* 'I wish I were the oldest'), the conditional *(r)i-* with subordinates (*siwiti?itu:te:rit* 'if we see each other'), the gerundial *ra-* with subordinates (*tiratpa:kastarit* 'what I'm going to say'), the infinitive *ra-ku-* for a variety of functions, and the desiderative (*tiku:waskista* 'I want to laugh').

Pronominal prefixes distinguish first, second, inclusive, and indefinite persons, with basic third person unmarked; singular, dual, and plural number, with singular unmarked; and agent and patient case. A case contrast can be seen between the first person agent *t-* and patient *ku-*: *ta-t-itka:?us* 'I like to dance', *ti-ku:ra:hurahac* 'I forget'. Duals are indicated with the prefix *si-*, but plurals by a variety of markers. Combinations can be seen in *si-ta-t-a-pirus* 'DUAL-INDICATIVE-1.AGENT-2.PATIENT-whip'= *sitatapiru* 'I whipped you two'. Reflexives and reciprocals are marked with the prefix *witi-*: *iriwesi-witi-tihra:hiwa:saskusta* 'then they'll call each other by kin terms'. A benefactive relation is indicated by a prefix: *tat-u:t-takusit* 'I picked it up for them'. Action on something possessed by the subject can be distinguished within the verb from action on something possessed by the object or another: *witita-t-irih-wa:waktit* 'I talked to mine (child)', *ti-ku-h-ta?ut* 'he stole mine'.

Among the aspects distinguished are perfective, imperfective, intentive (future), habitual, usitative, and inchoative. These may be combined: *tikura:riktis-a:r-is-ta* 'I am going to become old' (inchoative *-a:r-*, perfective *-is*, intentive *-ta*). Subordination is indicated by a variety of verbal suffixes, such as *-rit* in *we?itka?ista-rit* 'before I go to sleep'. Tense is not an obligatory inflectional category, but there is an optional past tense prefix *uks-*: *ahr-uks-itat* 'there was a village.'

Negation is marked either with the negative indicative mode *ka:ka:-/ka:ki:-* or with one of the four negative prefixes *ka-*, *kara-*, *ka:ku-* (possessive negation), or *kare:-i-* (emphatic negation). (The choice between the first two prefixes depends on the accompanying mode.) Their use can be seen in *ka-rati:kisiksta* 'I am not going to survive', *ku-kara-witucia* 'he didn't do anything', *ku-ka:ku-?e:ra* 'it is not their business', *e:-kare:-ret-i-?uhta* 'I am not going to go'.

A set of evidentials includes a quotative *wi-*, a marker of indirect experience *ar-*, a dubitative *kur-*, and an inferential *tir-*: *ti-hraku:tit ku:ruks* 'he must have killed a bear'. Additional adverbials include *uhu:-* 'now, finally' (*suks-uhu:-wi:tit* 'Sit down now!') and *awahc-* 'even, at least' (*raku-:wac-pi:tit* 'At least sit down!'). The function of the sequential *i-* is not fully clear, but it appears with sequences of related events.

A set of proclitics precede the prefixes and are more loosely associated with the verb. They include definite and indefinite deictics: *ti-rehrara* 'I have them here', *ta:-tatu:taciksu* 'this is my opinion'. There is an indefinite *ku=*: *ku=kare:re:tiwa:ku* 'I did not say anything'. Adverbial proclitics indicate time and place: *we=* 'now, when', *ha=* 'here': *we=tawica:hu* 'they are coming now'. Others are *ra:ru=* 'just', *ise:ru=* 'plainly', and *ctu=* 'so': *ku=ra:ru=kare:raku:wa:ku* 'Don't just say anything!'

Some of these structures can be seen in the passage below from a narrative told by Philip Jim to Douglas Parks in 1967 (Parks 1976: 339-56).

rawa	*taticka*	*ratkura:?i:wa:ti*
rawa	*ta-t-icka*	*ra-t-ku-ur-ra:-i:-wati-i*
now	INDICATIVE-1AGT-want	INFINITIVE-1AGT-INFINITIVE-PREV-way-X-dig-SUBORDINATE

'Now I want to tell about

irace:ru:ruksta:taweku:ki.
i=ra-acir-a-ri-ur-uks-ra:-tawe-kauk-i
that=GERUNDIAL-INCL.AGT-AGT.POSS-PHYS.POSS-PAT.POSS-AORIST-way-be.among-DIST-SUBORD
the customs we had,

ru:ra:pakuhtu	*irisikuhricikstecpa:wis*
ru=ra:-pakuhtu	*iri=si-kur-ra-ir-ut-i-uks-ra:-ic-wa:w-i:s*
then=way-old	that=PL-DUB-GERUNDIAL-BEN-RESULTATIVE-AORIST-way-learn-DIST-learn

the old ways then, whatever they learned,

ratara:ku:ki
ra-t-a-rak-kauk-i
GERUNDIAL-1AGENT-INCLUSIVE.AGENT-PLURAL-DISTRIBUTIVE-EXISTENTIAL.SUBORDINATE
our people.

rakura:ʔu *rakuhra:ʔi:wicuriki*
raku-ra:-uk *raku-ut-ra:-i-wic-hur-ik-i*
INFINITIVE-way-exist INFINITIVE-BEN-way-at.a.point-having.quality-DISTR-EXIST.SUBORD
the way they depended on.

rawa *siʔahri:riksta:ra:cihtisiki*
rawa *si-ar-ri-i-uks-rar-ur-ra:-cihtis-ik-i*
now PL-EVID-CONTINGENT-SEQ-AORIST-ITER-BEN-way-superstitious-DISTR-EX.SUBORDINATE
Now they were superstitious about their ways;

ahruksta:wa:ruksti:u
ar-ra-uks-wa:ruksti:-uk
EVIDENTIAL-GERUNDIAL-AORIST-be.miraculous-EXISTENTIAL.SUBORDINATE
It was a miraculous thing,

ahricikspahriʔusu:ku
ar-ra-ir-ut-i-uks-wa:-a:ri-i-:hus-u:ku
EVIDENTIAL-GERUNDIAL-PREVERB-PL-SEQ-AORIST-DISTR-do-IMPERFECT.SUBORDINATE-HABITUAL
what they did

ratara:ku:ki
ra-t-a-rak-kauk-i
GERUNDIAL-1AGENT-INCLUSIVE.AGENT-PLURAL-DISTRIBUTIVE-EXISTENTIAL.SUBORDINATE
our people.

ke:ci *ahri:riksta:ʔi:wa:tiusu:ku* *icahrikspakuhtu*
ke:ci *ar-ri-ir-ur-i-uks-ra:-i:-wati-:hus-u:ku* *icahriks-pakuhtu*
but EVID-CONTINGENT-PL-PREVERB-SEQ-AORIST-tell.story-IMPRF-HAB person-old
But the old people used to tell stories,

tiruksuri:wa:wiku:ki
ti=ra-uks-huri:-wa:-wi-kauk-i
this=GERUNDIAL-AORIST-live-DISTRIBUTIVE-EXISTENTIAL.LOC-DIST-EXISTENTIAL.SUBORDINATE
those who were living before now.'

Cayuse*

The Cayuse language was spoken in the early nineteenth century in what is now northeastern Oregon and adjacent southeastern Washington, around Butter Creek, the headwaters of the Umatilla, Walla Walla, and Grande Ronde Rivers, and the Touchet, Tucannon, Powder, and Burnt Rivers. Marcus Whitman established a Presbyterian mission among the Cayuse in 1836 which lasted until he was killed in the Cayuse War in 1847. Some of the Cayuse then settled among the Nez Perce, but most joined the Umatilla and Walla Walla on the Umatilla reservation, near Pendleton, in 1853. Whitman reported in 1837 that extensive intermarriage of the Cayuse with the neighboring Nez Perce had resulted in universal bilingualism of Cayuse adults and no knowledge of the Cayuse language at all by their children. In 1888, H.W. Henshaw found only six elderly speakers of Cayuse. Melville Jacobs, Vern Ray, and Morris Swadesh collected lexical material in the early 1930s. Bruce Rigsby was told in 1964 that the last fluent speakers had died in the 1930s.

Cayuse was assumed for a time to be related to the Molala language in a grouping termed Waiilatpuan. (Whitman's mission was named Waiilatpu. The Sahaptin term for Cayuse was *wáylatpam*, the Nez Perce term *weyí·letpu·*.) The assumption originated with Horatio Hale's publication in 1846 of vocabularies from the two languages. Although no case was made for the relationship, the languages were grouped together as a 'Waiilatpu family'. Rigsby suggests that Hale may have assumed a relationship on the basis of a comment from Whitman that the languages were mutually intelligible (1966, 1969). The grouping was repeated in Powell 1891. After careful examination of all existing material, however, Rigsby concluded that there is no evidence of a relationship and that the languages were not mutually intelligible. The speakers Whitman observed talking together may not have been using their own mother tongues at the time. The superficial resemblances that exist are attributable to chance and to areal contact, which was extensive.

Documentation of the Cayuse language is relatively poor in both quantity and quality. It is mainly lexical rather than grammatical. In addition to the wordlist in Hale 1846, material was collected by William McBean in 1859 at the request of George Gibbs (BAE ms 994, attributed to Capt. Thomas Jordan), by Henshaw in 1888 (BAE ms 1001), by Melville Jacobs in 1930-1, by Vern F. Ray in 1931-2, by Theodore Stern in 1963, and by Rigsby in 1963-4. All of the material has been assembled in Rigsby 1969, from which examples here are drawn.

Rigsby notes that Cayuse phonetics appear to have been complex, like those of other Pacific Northwest languages, but that the generally poor quality of transcription in available sources makes it impossible to reconstitute the sound system.

Little of the grammar can be reconstituted, because the material gathered was

primarily lexical. Henshaw did collect two verbal paradigms.

wi-tu-tuŭnt	'I am hungry'
kler-ka-wɪ̆-tu-tŭnt	'I was hungry'
wí-tu-näk-sŭnt	'I will be hungry'
swi-tu-ter-yɪ̆k	'you and I are hungry'
swi-tu-te-lɪ̆-kai-ɪ̆k	'you and I were hungry'
nɪ̆ng-i-li-pʔl-swi-tu-nak-stunk-a-wak	'you and I will be hungry'
tu-swi-tu-tuñg-a	'you are hungry'
swi-tu-til-kutla	'you were hungry'
swi-tu-nak-stung-at-la	'you will be hungry'

nɪ̆s-ka-mu-tiñg	'I am thirsty'
nɪ̆s-ka-mu-til	'I was thirsty'
nɪ̆s-ka-mu-näk-skɪ̆n	'I will be thirsty'
tu-mɪ̆s-ka-mu-tɪ̆ñg	'you are thirsty'
mɪ̆s-ka-mu-til-hă	'you were thirsty'
mɪ̆s-ka-mu-na-stɪ̆nk-la	'you will be thirsty'

Both Hale and McBean recorded independent pronouns. They agree in the first person singular (H. *ínin*, M. *in ning)*, but not plural (H. *námək*, M. *nung naw waw*). Rigsby notes that Hale's form resembles those in Sahaptin, and McBean's should probably be glossed 'all'. Hale lists three second person forms (*nikí* 'thou', *nkímiš* 'you two', *mkímiš* 'ye'), while McBean lists only one (*in kai* 'thou, also ye'). They agree in third person singular (H. *nip*, M. *neepe* 'he'), but not plural (H. *nípik*, M. *cap pick* 'they'). McBean's form probably contains a demonstrative stem plus plural.

Rigsby was able to cull a partial paradigm of possessed nominals from Henshaw. The first and second person possessive prefixes are identical in form and meaning to possessive suffixes in Molala, but Rigsby suggests that the pronouns in both languages may have come from contact with Sahaptin dialects (cf. Umatilla *ʔinmí ʔipáp* 'my hand'). The third person forms probably do not contain personal pronouns, but should instead be glossed 'that one's hand' and 'woman's hand' respectively.

ɪ̆n-äp-pɪ̆p	'my hands'	*un-kán-äp-pɪ̆p* 'our hands'
im-ä-pɪ̆p	'your (sg) hands'	
käp-män ăp-pɪ̆t	'his hands'	
lŭk-tŭng-sŭng ăp-pɪ̆t	'her hands'	

CHIMAKUAN FAMILY

Chemakum = Chimakum*
Quileute = Quillayute

The Chimakuan languages are indigenous to the Olympic Peninsula in northwest Washington State. Chemakum (from a Salish name for them, cf. Twana *čəbqəb*) was spoken until the 1940s on the east side of the peninsula between Hood Canal and Port Townsend. Quileute (from their *kʷoʔlí·yoʔ*, village name at La Push), is still spoken by a few persons on the west coast south of Cape Flattery at La Push and Lower Hoh River. The genetic relationship between the two languages, likened to that between English and German, was recognized soon after the first vocabularies were recorded in the mid-19th century. Swadesh proposed that the Chimakuan, Salishan, and Wakashan families might be remotely related in a stock he called Mosan (1953a,b), but the proposal has generally been abandoned. (Discussion of the Mosan proposal can be found in section 6.3.)

Published work on Chemakum is in Eells 1880, Boas 1892, Powell 1972, and Brooks 1997. Work on Quileute includes a note on abnormal types of speech (Frachtenberg 1920b), texts recorded by Frachtenberg and by Andrade (Andrade 1931), a grammatical sketch (Andrade 1933), studies of tone (Hoard 1993), deixis (Powell 1971), placenames (Powell, Penn, et al. 1972), a speech (Powell and Hymes 1990), and botanical terms (Powell and Woodruff 1971). There are also workbooks (Powell 1975, 1976) and a dictionary (Powell and Woodruff 1976). Comparative work, surveyed in Jacobsen 1979f, includes Andrade 1953a,b, Swadesh 1955, and a major study by Powell (1974). General surveys of the family, with locations of unpublished manuscripts, are in Adler 1961, Thompson 1973: 380-2, Powell 1974, 1990a, Elmendorf 1990, Kinkade 1990, and Thompson & Kinkade 1990.

The Chimakuan languages, like others in the Northwest, have rich consonant inventories. Forms cited here are Quileute from Andrade with his transcription. There are labial, dental, velar, labio-velar, uvular, and labio-uvular stops (*p, t, k, kʷ, q, qʷ*), and dental, palatal, and dental-lateral affricates (*ts, tc, tɬ*), all in plain and glottalized series. Quileute voiced labial and dental stops (*b, d*), correspond to Chemakum nasals *(m,n)*. Quileute contains no nasals and Chemakum no voiced stops. Both languages contain dental, palatal, lateral, velar, labio-velar, uvular, and labio-uvular voiceless fricatives (*s, c, ɬ, x, xʷ, χ, χʷ*), and *ʔ* and *h*. Resonants are *w, l,* and *y*. Vowel length is distinctive: *ót'a´yat* 'hand', *ót'a·´yat* 'arm'. Stress is often but not always penultimate. Andrade describes a pitch accent system, whereby stressed syllables exhibit one of four melodic contours: high-falling, low-tone, middle-tone, and high-tone. Morphophonemics are not complex, with a glottal stop inserted between vowels at morpheme boundaries, and a predictable epenthetic vowel *a* or

i between consonants.

Morphological structure is similar to that of the Salish and Wakashan languages. Nouns and verbs are not strongly differentiated. The same roots and suffixes may appear in both, with a distinction appearing only in final inflectional suffixes if at all. As in Salish and Wakashan, the distribution of meanings between roots, which are initial, and suffixes differs from that of many languages. Some initial morphemes have expected root-like meanings, such as *la'o-* 'to walk' or *t'cod* 'foot'. Others, with more general meanings like *hé-* 'to be' or *ó-* 'to be in a location', serve primarily as anchors for suffixes. These suffixes, termed by Andrade 'postpositive morphemes' are similar in function to the lexical suffixes of other languages in the area. Andrade lists nearly 150 with noun-like meanings, such as *-ku* 'river canoe' and *-ɬ* 'face', and 65 with verb-like meanings, such as *-'al* 'to catch' and *-kiyi* 'to paddle'. In many cases similar concepts can be expressed by either a root or a suffix, such as *hae·ta´t* or *-k'i*, both translated 'arrow'. Often the suffixes are more generic in meaning. The root *tsiyá.pus*, probably from French *chapeau*, means simply 'hat', while the suffix *-dist'c* indicates a range of headcoverings including hats, caps, and feather headdresses. Other postpositive morphemes indicate distinctions more typical of affixes, such as *-sal* distributive plural, *-sqal* reflexive, and *-c* inchoative. Initial root morphemes sometimes appear as words alone, but the suffixes do not.

Some suffixes specify modal distinctions: optative *á·la-c-i´'-t'col-aks* 'she wishes to eat', jussive *á·la-c-i´-st'al-aks* 'she ordered him to eat', necessitative *á·la-c-i´-tax* 'surely, he must eat', inferential *á·la-x-a´-tsa* 'he must have been eating', concessional *á·la-x-a´-qcil* 'although he was eating', an obligative *á·la-x-a´-ɬqa-li* 'I ought to eat', and a hearsay *á·la-x-a´-ku-l-atc* 'it is said that he eats'. Past and present tense are unmarked, but there is a future tense suffix. There is a suffix that indicates former events or states (*há·xili´yilitc* 'you had boiled') and another that signals imminent ones (*háb·ali´ɬ* 'it is going to fall'). Momentaneous and durative aspects are distinguished: *tcatc-i´* 'it flew away', *tca·´tc-a* 'it is/was flying'.

Subjects and objects are specified by pronominal suffixes that vary in shape according to indicative, interrogative, subjunctive, conditional, and imperative modes. Three persons are distinguished, although third persons are not always overtly marked, and two numbers. Within third person, masculine and feminine genders are distinct, and visible, invisible but known, and invisible unknown entities. There are also vocative pronouns and possessive pronouns that distinguish first, second, and third singular and plural, and within third singular, one's own from another's. When a passive suffix *-qa* is used, the patient is cast as grammatical subject and the agent as oblique. When a third person acts on a second, the passive is always used, much like an inverse: *se·ya-litc* 'you see (him)', *se·ya-qa-litc* '(he) sees you, you are seen'.

Nominals appear with independent articles that distinguish feminine from non-feminine gender, and subjective, definite oblique, and indefinite oblique cases. Demonstratives also distinguish feminines from non-feminines, and entities that are visible near the speaker, visible near the hearer, visible near both, visible but removed from both, invisible but known, invisible but related to previous experience (hearsay or linguistic context), and invisible unrelated unknowns.

Unmarked word order is predicate-subject-object (VSO) in main clauses, but subjects do appear initially to indicate contrast or a shift in topic. Clauses may be conjoined by simple juxtaposition with appropriate intonation, or with conjunctions. Subordination may be accomplished by juxtaposition as well, or marked by a final verbal suffix: *t'a·´tcaxas kí'tax-a* 'he knows that he is going'. Word order in subordinate clauses is subject-initial if a subject is present.

Some of these constructions can be seen in the lines below from Andrade 1933: 279, among them root-suffix combinations, case-bearing articles, feminine and non-feminine demonstratives (F and -F), nominalization, and subordination.

kí'ta-x yik á't'cit-t' hé-ol-ic kaki´ tsitsí'itskwa´'a t'iyó·qo't's-oli´ɬ.
go-CONT F.NOM chief-wife be-tog-INCEP F.PL.OBL daughter-RDP dig.fern.rt-go.MOM
'The chief's wife was going with her daughters to dig fern roots.

kí'ta-x xabá· la ha'yé-q"-ba·´y-ili.
go-CONT be.all each carry.with.pack.strap-position.on-basket-SUBORDINATOR
They went on, each with her pack basket.

tsix há't'c-á·ɬ-owa´'.
very be.good-weather-away
It was very good weather.

é.la· sa´'a, xwa'á-v xe' itcá·-ɬ-a´t
be.active -F.NEAR reach-LOC -F.DEF.OBL head.for-PURPOSE-NOMINALIZER
So they arrived at their destination,

t'ɬayo´'-wà· tâ·ɬ-i´c la´'-v
subsequent-away to.last-INCEPTIVE walk-LOCATIVE
after walking for a long time

itcâ-ɬ-i xe ó-q'o-tse·c-é·ɬ-ili´t qwa´s-eli.
head.for-PURPOSE-SUBORD -F.DEF.OBL be-on-select-PURPOSE-NOM root.dig-SUBORD
toward the place where they had planned to dig roots.'

Chimariko*

The Chimariko language was spoken in northwest California in Trinity county. Encounters with fur trappers early in the nineteenth century affected the Chimariko little, but the gold rush proved disastrous, so that by the turn of the century few individuals were left. The language was probably last spoken in the 1930s.

Chimariko is not closely related to any other language. In 1910 Dixon postulated a special relationship with Shasta, Achumawi, and Atsugewi, based on 57 sets of phonetically similar lexical items. All four languages were then included in the Hokan stock proposed by Dixon and Kroeber in 1913. In his 1929 classification Sapir delineated a subgroup of Northern Hokan consisting of Karuk, Shasta, Achumawi, and Atsugewi, later termed Kahi (Bright 1955). A number of works exploring the Hokan hypothesis have included Chimariko, especially Sapir 1920a, 1921 and Crawford 1976.

Field work on Chimariko was carried out by Kroeber, Dixon, Harrington, and Sapir. Dixon 1910, from which material cited here is drawn, contains ethnographic notes, a grammar, texts, and lexicon, but unfortunately, phonetic distinctions noted by Harrington and Sapir were often missed. Landar 1974 contains a comparison of forms from Dixon 1910 and Harrington's notes. Bauman 1980 describes Chimariko placenames and the linguistic complexity of the area, due to extensive Hupa-Chimariko-Wintu contact. Berman 1985 discusses alternations in consonant quantity.

Like other languages in the area, Chimariko has a large consonant inventory, with bilabial, apical, retroflex, palatal, velar, and uvular stops in three series: plain, aspirated, and ejective. There are apical, retroflex, palatal, velar, and uvular fricatives, and resonants *m, n, w, y, l,* and *r*. All appear both long and short.

A few roots serve either as nouns referring to body parts or as verbs: *tu* 'wing', 'feather', 'to fly', *pen* 'tongue', 'to lick'. Noun stems may be compound: *tcitci-āqai* 'manzanita-water' = 'cider', *xuli-teni* 'bad-hand' = 'left hand'. Derivational suffixes include a diminutive (*itrī* 'man', *itri-lla* 'boy'), a privative (*aqūye* 'tail', *aquye-ckut* 'tailless'), and others. Nouns carry no distinctions of gender, number, or core case, but may appear with ablative, instrumental, and/or possessive suffixes.

Verb stems sometimes include number as part of their lexical meaning: *-wo-* 'for one to sit', *-pat-* 'for several to sit'; *-mum-* 'for one to run', *-tcaxis-* 'for several to run'. Verbs contain pronominal affixes that reflect an agent-patient distinction. Participants initiating actions such as speaking or running, or embodying inherent qualities such as being fat or good, are specified by verbal prefixes: *mī´-qot* 'you speak', *mi-xun* 'you are fat'. Similar prefixes indicate inherent (inalienable) possession on nouns: *mī-po* 'your ear'. Participants affected by events like bleeding or dying, or conditions like being hungry, sick, hot, cold, or wet, are specified by verbal suffixes: *lá-mipukni*

'you are weak'. Similar suffixes appear with nouns to indicate accidental (alienable) possession: *masomas-mi* 'your red salmon'. Three persons are distinguished, with inclusive and exclusive first person, and singular and plural number in first and second person. In transitive verbs only one participant is specified pronominally: first or second person agent if present; then first or second person patient; then third person agent.

A set of instrumental prefixes on verbs contribute meanings like 'with the side of a long object', 'with a round object', 'with the foot', 'with the hand', and 'by sitting on': *ni-a-klucmu* 'knock over with a bat', *ni-e-klucmu* 'knock over with end of pole'. There is some noun incorporation: *āpexadjit* 'fire he steals', *āpisuxta* 'fire he throws away' (*āpu* 'fire', *-xadj* 'steal', *-sux* 'throw'). Directional suffixes contribute meanings 'down', 'into', 'up', 'apart', 'around', 'towards', 'across', 'out', 'out of', 'through': *hu-tsus-min* 'he flies down', *hu-tut-puye* 'he flies around', *hu-tsu-sku* 'he flies toward'. Tense/aspect/mode suffixes mark past, present, future, continuative, participials, habituals, conditionals, dubitatives, desideratives, interrogatives, and negatives.

Some of this morphology can be seen in the passage below from Dixon 1910: 341: a nominal suffix *-da* 'ward' in 'eastwards'; third person agent pronominal prefixes beginning verbs '(they were) going', 'it will rain', 'it will blow', 'he stood up'; a participial suffix *-da* in 'going'; a future suffix in 'it will rain' and 'it will blow'; a derivational suffix *-na* 'tree' in 'live oak tree'; a second person agent prefix 'you' beginning the verb 'hold tight'; a second person patient suffix *-mi* in 'you shall be strong' followed by a future suffix *-xan*; an imperative pronoun *n-* in 'come back!'

wa´da	*howa´mda*	*cice´lla*	*tcitindo´sa*
Eastwards	going	dog	coyote

'Dog and Coyote were travelling eastwards.

hitake´gon	*hiko´se'egon*	*yū´triina*	*ma´wimuda´tcsun*	*tcitindo´sawi*
it will rain	it will blow	live oak tree	hold tight	coyote

Dog said, "It is going to rain, it is going to blow. Hold tight to a live oak tree."

yū´tri	*ino´p*	*iko´tkut*	*tcitcindo´sa*	*exo´kut*
live oak	tree	it blew	coyote	blew away

It blew, and Coyote was blown away.

citce'lla	*huhoada´ndat*	*nuwauk*	*pala´mixan*	*nuwau'´k*
dog	he stood up	Come back!	you shall be strong	come back!

Dog stood up. "Come back, you shall be strong!"'

CHINOOKAN FAMILY

Lower Chinook = Coastal Chinook*: *Clatsop, Shoalwater = Chinook proper*
Kathlamet = Katlamat = Cathlamet*
Upper Chinook = Kiksht = Columbia Chinook: *Multnomah*, Clackamas*, Cascades*, White Salmon*, Hood River*, Wasco-Wishram*

The Chinookan languages (from *ts'inúk*, the Chehalis name for them) were spoken earlier along the Columbia River from its mouth upriver about 200 miles. The two Lower Chinook dialects were spoken at the coast, Clatsop on the south side of the river in Oregon, Shoalwater on the north side up to Gray's Harbor and Shoalwater Bay in Washington. Upriver was Kathlamet, from around present Astoria to Ranier. Still further upriver were the Kiksht dialects. Clackamas was spoken south of present Portland into the Willamette Valley. The easternmost dialect, Wasco-Wishram (from *Wúšxam*, the Sahaptian name), extended a few miles above what is now The Dalles, Oregon. Shoalwater, Kathlamet and Clackamas were last spoken in the 1930s. There is little documentation of Multnomah, Cascades, White Salmon, or Hood River. Wasco is now spoken by six elders on the Warm Springs reservation in Oregon and Wishram is spoken by two on the Yakima reservation in Washington (Millstein 1998).

Kathlamet has traditionally been considered a dialect of Upper Chinook, but work by Silverstein 1974 and Hymes 1984 indicates that it was not mutually intelligible with the Kiksht dialects. It represents a language in itself, intermediate between Lower and Upper Chinook linguistically as well as geographically. It lacks the extensive sound symbolism of Kiksht, pervasive intervocalic voicing of consonants, and the fully elaborated tense prefix system, and differs in initial nominal prefixes and some other morphemes, including independent pronouns (Hymes p.c. 1992). Wasco and Wishram are subdialects, differing only in one phoneme and a few lexical items (Hymes 1961). Frachtenberg presented some lexical evidence for relating the family to Takelma and Kalapuya (1918), and Sapir grouped Chinookan into a greater Penutian stock with California Penutian (Utian, Yokuts, Maidu, Wintun), Oregon Penutian (Takelma, Kalapuya, Coos-Siuslaw-Alsea), Tsimshian, Plateau Penutian (Sahaptian, Cayuse-Molala, Klamath-Modoc), and Mexican Penutian (Mixe-Zoque, Huave) (1921a, 1929). The Penutian affinity of Chinookan is not considered fully demonstrated, but Sapir (1921b), Hymes (1964), and Silverstein (1979) evaluated it as probable.

References to 19th-century materials on Chinookan languages can be found in Pilling 1893a. Major published works since that time include good text collections and grammars. For Shoalwater there are early notes (Boas 1893), a vocabulary (Boas 1904), texts (Boas 1894a), a description of the verb morphology based on Boas' Shoalwater materials (Swanton 1900), and a grammatical sketch (Boas 1911b). For Kathlamet there are texts (Boas 1901) and a grammar based on the texts (Hymes 1955a). For Clackamas there is also an extensive text collection (Jacobs 1958, 1959). Hymes 1984 discusses the origin of a text collected by Boas in the 1890s in what was apparently a subdialect of Clackamas. For Wishram there are notes by Sapir (Sapir 1907b, Boas 1911b), a grammar (Dyk 1933), and texts (Sapir 1909c). Dyk and Hymes (1956) describe the effects of certain morphemes, sentence rhythm, and rhetorical style on stress in Wishram. Silverstein 1976 outlines the case and voice systems. Moore 1988 reports a process of obsolescence in Wasco whereby speakers have reanalyzed complex lexical items as single units open for reinflection. Other aspects of Wasco-Wishram grammatical structure are discussed in Silverstein 1977, 1978, and 1984 and Hymes 1975. There are a number of important studies of rhetorical structure (French 1958, Hymes 1958, 1961, 1980a, 1985a,b, 1987b,c, Silverstein 1985).

In comparative work, Sapir 1926 shows the effect of palatalization on paradigms, and Silverstein 1974 reconstructs the development of tense in the family, from a simple system that has remained in Lower Chinook, with elaboration in Kathlamet, and finally four new past tenses in Kiksht, showing that the systems at each edge match those of unrelated neighboring languages, Salish in the west, Sahaptian in the east. Hymes 1975 describes the interaction of tense and directive prefixes and Hymes 1992 consonant symbolism. Material cited here is drawn from Hymes' 1955 grammar of Kathlamet unless otherwise specified.

The languages exhibit the rich consonant inventories typical of the Northwest coast. Kathlamet contains bilabial, dental, velar, and uvular stops *p, t, k, q*, and lateral and dental/palatal affricates *ƛ, c/č*, all plain and ejective. There are lateral, dental/palatal, velar, uvular, and laryngeal fricatives *ɬ* (written *L*), *s/š, x, χ, h*, and nasals *m, n*. Glides *y, w* are considered allophones of high vowels. There are long consonant clusters: Kathlamet *qtk´kst* 'done', *nckɬxlmúxuma* 'we go to eat them'. Sapir commented on the voicing of medial stops in Wishram: Kathlamet *ópa*, Wishram *wába* 'yellowjacket'; Kathlamet *antótina*, Wishram *indúdina* 'I killed them' (1907). There are elaborate phonological processes. Boas describes accent effects, vowel harmony, consonant assimilation, consonant vocalization, vocalic change, metathesis, dieresis, contraction, and weakening and strengthening of consonants. Accent effects and vocalic harmony are automatic, but the others are restricted to specific morphemes. Harmony, assimilation, syllabification, and vocalic change are attributed to contact.

Sapir (1907, 1911b) and Boas (1911b: 645-6) discuss extensive onomatopoeia. Some forms are expressive particles: Shoalwater *oχuiwā´yul kumm, kumm, kumm, kumm* 'They danced, kumm, kumm, kumm, kumm'. Many are stems: *hē´hē´* 'to laugh', *cix* 'to rattle', *wāx* 'to pour out', *tcθup* 'to flicker', *lɛp* 'to boil', *lōlō* 'round'.

Sapir reports on extensive consonant symbolism in Wasco-Wishram (1907, 1911b). Stops and affricates are shifted to ejectives, and palatals to apicals for diminutives; plosives, including ejectives, become plain and voiced, and apicals become palatals

for augmentatives. Hymes 1961 notes that in 1906 Sapir recorded *i-tsiktsik* 'wagon' (from the sound of wheels), *i-ts'ikts'ik* 'buggy', and *i-djikdjik* 'heavy truck', and half a century later he himself recorded *itsiktsik* 'wagon', *i-dzikdzik* 'large log truck'.

Demonstratives, nouns and verbs are morphologically complex. Roots are often no longer than affixes, only a consonant or cluster. All contain pronominal prefixes.

Demonstratives distinguish gender, number, proximity, and in Lower Chinook, visibility. Shoalwater demonstratives thus consist of three parts: *x·-* present/visible or *q-* past/invisible; then *-i-* masculine, *-a-* feminine, *-L-* neuter, *-ct-* dual, or *-t-* plural; then *-k* near speaker, *-au* near hearer, or *-x̣* near other: *x·ik* 'he' (visible, near speaker).

Nouns may contain an initial prefix, pronominal prefix, possessive prefix, inner nominalizer, root, a qualifying suffix, plural, and final suffix. Initial prefixes serve primarily as nominalizers: Kathlamet *n-a-ɬxuáp* 'NOMINALIZER-PRONOUN-dig' = 'hole, digging place'. These are followed by an obligatory pronominal prefix similar in form to the prefixes of demonstratives and absolutive prefixes of verbs. Masculine prefixes appear with nouns designating male persons (*i-qi.úqt* 'old man'), feminine with those denoting female persons (*a-qi.úqt* 'old woman'). The neuter may indicate indefiniteness (*ɬ-qi.úqt* 'an old person'). All are used for nouns referring to objects as well. Boas reported that for Shoalwater, masculine prefixes appear with large animals, feminine for small ones: Shoalwater *ī́-pɛnpɛn* 'badger', *ṓ-pɛnpɛn* 'skunk'. The size relation has been extended in a few cases: Shoalwater *ḗ-pqunx* 'large round spruce-root basket', *ṓ-pqunx* 'small round spruce-root basket'. Masculine prefixes also appear with nouns expressing qualities. Dual prefixes appear with naturally occurring pairs: Shoalwater *s-xōst* 'eyes, face', and similarly plurals: *t-qamilā́ɬɛq* 'sand'. The gender categories are extended to all nouns. Hymes found that the semantic classes were more often not semantically motivated for Wasco, although speakers could take advantage of the distinctions for new vocabulary.

The gender/number prefixes may be followed by possessive pronominal prefixes, similar in form to the ergative prefixes of the verb: *i-mi-x̣atákuax* 'MASCULINE-your thoughts'. These distinguish first, inclusive, second, third, fourth (indefinite) person, dual and plural possessors. The possessive prefixes are followed by the noun stem, perhaps including another nominalizer: *k-i-tá-ki-klal*: 'NOMINALIZER-MASCULINE-their-NOMINALIZER-see' = 'the seers'. Nominal suffixes indicate emphasis or contrast, specificity, succession in time ('next'), definiteness, 'alone', 'only' (*i-sitʾix-ka* 'one-half only'), plurality (*ɬ-tamqʾáɬ-ks* 'bone war clubs'), and time, location (*t-qáɬ-max-pa* 'creeks at'), or similarity (*ɬ-kʷu.iásx̣-ti* 'like young fish' = 'slippery').

Verbs may contain an initial tense or aspect prefix, ergative pronominal prefix, obligatory absolutive prefix, dative prefix, reflexive/reciprocal/middle, adverbial, directional, and verb stem. As noted earlier, the number of tense/aspect prefix distinctions varies among the languages. Kiksht shows a six-way tense distinction:

mythic past, remote past, recent past, immediate past, present, and future.

The pronominal prefixes are obligatory, whether free nominals occur in the clause or not. Three can be seen in the Kathlamet verb *i-c-i-nc-ú-lx̣am* 'IMMEDIATE.PAST-MASCULINE.ERGATIVE-MASCULINE.ABSOLUTIVE-1DATIVE-ABLATIVE-tell'= 'he told it to us'. The ergative refers to the agent of a transitive verb (here *c-* 'he'), the absolutive to the patient of a transitive or single argument of an intransitive (here *i-* 'it'), the dative to the indirect object (here *n-* first person + *-c-* plural = 'to us'). Reflexive prefixes can serve as reciprocals (*na-n-t-x̣-u-uáqu-a* 'NON.IMMEDIATE-1ABSOLUTIVE-PL-REFLEXIVE-ABLATIVE-kill-FUTURE' = 'we shall kill one another') and as medio-passives (*a-m-x̣-sáqu* 'FUTURE-2ABSOLUTIVE-REFLEXIVE-dry' = 'you are dry'). When the reflexive follows an ergative-absolutive pronoun sequence, it indicates that the person indirectly affected (the dative) is the same as the ergative: *a-n-ɬ-x̣-kʔá.ia* 'FUTURE-1ERGATIVE-NEUTER.ABSOLUTIVE-REFLEXIVE-haul' = 'I will haul her (any woman that passes) ashore for myself (and lie down with her)'. When it follows an absolutive-dative pronoun sequence, it indicates that one indirectly affected is associated with the absolutive, perhaps as the whole in a part-whole relationship, or the owner: *i-c-í-a-x̣-ux* 'IMMEDIATE-MASCULINE.ERGATIVE-MASCULINE.ABSOLUTIVE-FEMININE.DATIVE-REFLEXIVE-do' = 'he cut it (her neck) off'.

Adverbials specify directional relations, such as 'to', 'in', 'with', 'for', 'into', 'toward', 'near', 'over', 'into house', 'out of', or 'on the ground': *i-cʼ-ɬ-x̣-tk* 'IMMEDIATE.PAST-MASCULINE.ERGATIVE-NEUTER.ABSOLUTIVE-on.ground-put.down' = 'he put it down on the ground'. These may be followed by a directive prefix *t-* 'toward' or *u-* 'away': *m-t-í-a* '2ABSOLUTIVE-ALLATIVE-move-FUTURE' = 'come', *m-ú-i-a* '2ABSOLUTIVE-ABLATIVE-move-FUTURE' = 'go'. The directives are pervasive and contribute subtle meanings (Hymes 1961, 1975). In the same position may appear an antipassive, which eliminates semantic patients from core-argument status: *i-s-xʼ-l-kʔi-xs* 'IMMEDIATE.PAST-DUAL.ABSOLUTIVE-REFLEXIVE-in-ANTIPASSIVE-cut' = 'they two cut (elk)'.

Verb stems may be simplex or compound, the second member indicating direction, including motion out of, from open to cover especially from water to shore or inland, from cover to open especially toward water, into, down, or up: *ik-a-u-x̣úni-pck* 'IMMEDIATE.PAST-FEMININE.ABSOLUTIVE-ABLATIVE-drift-ashore' = 'she drifted ashore'.

Suffixes include repetitives, causatives, an involuntary passive (*ik-i-xúma-x̣it* 'IMMEDIATE.PAST-MASCULINE.ABSOLUTIVE-fall-involuntarily' = 'he fell down'), completives, stative, purposive (*i-s-x-quát-am* 'IMMEDIATE.PAST-PL.ABSOLUTIVE-REFLEXIVE-bathe-PURPOSIVE' = 'they went to bathe'), future, usitative, successful completive, and others.

Nouns may be used predicatively, with the pronominal prefix functioning as an absolutive: *nʼ-ɬʔala* '1-fool' = 'I am a fool.' Verbs are also used as nominals: Wishram *qēxgɛ́lgɛlim* 'people keep looking through it' = 'telescope' (Sapir 1907).

As in many North American languages, verbs constitute complete clauses in

themselves. Nominals may accompany the verbs, but they have adjunct status, functioning as appositives to the pronominal affixes. Word order functions purely pragmatically; constituents appear in decreasing order of newsworthiness. Clauses are combined by juxtaposition or particles, rather than subordinating inflection.

The lines below are from a Kathlamet text collected by Boas from Charles Cultee (1911b: 671), as reanalyzed phonologically and morphologically by Hymes (1955a: 299-306). The internal structures of demonstratives, nouns, and verbs can be seen, as well as the pragmatic role of word order. In lines 1 and 2 the nominals 'those people' represent established entities and are ordered late, after the new actions 'danced' and 'became tired'. In the last sentence the nominal 'an old woman' appears early, focusing on a new participant, followed by the reiteration of the predicate 'sleep'.

á.qa	*uí.tˀax*	*i.ku.Xui.uí.uck*	*ta.i.ci*	*t´l.Xam*
aqa	*ui-ɬax*	*ik-u-x̣ui-ui-iu-ck*	*t-aici*	*t-lx̣am*
then	now-next	IMM.PAST-PL.ABS-RFL-with-dance-PRF	PL-that	PL-person

'Then the people danced again.

qí.qˀa.iaq	*uá.pul.pa*	*á.qa*	*tl*	*i.kú.xuax*	*ta.i.ci*	*tǽl.Xam*
qiq́aiaq	*u-a-pul-pa*	*aqa*	*tl*	*ik-u-x-ua-x*	*t-aici*	*t-lx̣am*
middle	ARCH-FEM-night-at	then	tired	IMM-3PL-ABS-RFL-do	PL-that	PL-person

At midnight they became tired.

i.ku.kua.qí.uit.Xit
ik-u-kua-qi.uit-x̣it
IMMEDIATE.PAST-3PLURAL.ABSOLUTIVE-AGENTIVE-rest-PASSIVE
They slept.

Li.Xát	*Lqˀi.úqt*	*Laq.kí.lak*
ɬ-ix̣at	*ɬ-q́iuqt*	*ɬ-qakilak*
NEUTER-one	NEUTER-old.person	NEUTER-woman

One old woman

as	*nú.Lˀix*	*i.kú.pu.nm*	*á.qa*	*i.Lu.qú.tit*
as	*nuɬˀ-ix̣*	*ik-(a)-u-pun-m*	*aqa*	*i-ɬ-u-qupti-t*
and	a.little-time	IMM.PAST-F.ABS-ABL-dark-PRF	then	IMM.PAST-NEUTER.ABS-sleep-ST

slept when it began to be dark.'

Chitimacha*

The Chitimacha were first encountered by the French at the end of the 17th century in southern Louisiana, along the shores of Grand Lake (Swanton 1919: 8). Their numbers were severely depleted by early wars with the French and their allies, when many were killed and others sold into slavery. After peace was concluded in 1718 they dispersed, settling on Bayou Teche, Bayou La Fourche, and as far north as Plaquemine. Descendants of the Bayou Teche group eventually moved to Charenton, and only their dialect has been recorded. The last two fluent speakers were Benjamin Paul, who died in 1934, and Delphine Ducloux, who died in 1940 (Swadesh 1948). Swanton traces the name Chitimacha to *Sheti*, their own term for those originally living along the lower Atchafalaya (1919: 8).

The language has no close relatives. It has been hypothesized that Chitimacha might constitute part of a remotely related Gulf stock along with Atakapa, Natchez, Tunica, and the Muskogean family (Swanton 1919, Swadesh 1946a, Haas 1951, 1952).

General surveys are in Crawford 1975, Haas 1973a, and 1979a. A detailed list of references is in Booker 1991a. The first recorded Chitimacha is a vocabulary by Martin Duralde (or by a man named Murray and submitted to Duralde) in 1802 at the Attacapas Post, now Franklin, Louisiana. That wordlist was reprinted in Gallatin 1836: 307-67 and elsewhere. In 1881-2 Gatschet recorded some material, about 20 words of which appear in Gatschet 1883. Beginning in 1907 Swanton checked the Gatschet notes and collected additional material including texts. These notes were used in Swanton 1917 (myths with a few Chitimacha words) and 1919 (a comparison of Atakapa, Tunica, and Chitimacha). Between 1932 and 1934 Swadesh worked with the last two good speakers. From this work came discussions of phonology (1934, 1937), of verbs of derogatory or abusive connotation (1933), of the possible relationship of Chitimacha and Atakapa (1946a, 1947), and a brief but fine grammatical sketch (1946b). Considerable additional material, including a more extensive grammar, remains unpublished in the American Philosophical Society in Philadelphia. Haas 1939a contains a discussion of kinship terms based on Swadesh's notes. Material cited here is drawn from Swadesh 1946b.

The sounds of Chitimacha are much like those of neighboring languages with the addition of an ejective series. There are stops *p*, *t*, *c*, *č*, *k*; ejectives that Swadesh writes *b*, *d*, *ʒ*, *ǯ*, *g* (presumably *p̓*, *t̓*, *c̓*, *č̓*, *k̓*); *ˀ*; fricatives *s*, *š*, *h*; and sonorants *m*, *n*, *w*, *y*. Ejectives are weakly glottalized syllable-initially and reduced to glottal stop syllable-finally. Nasals may be syllabic nuclei. There are short and long vowels: *i*, *e*, *a*, *o*, *u*; *i·*, *e·*, *a·*, *o·*, *u·*. Many words, including most finite verbs, show alternative brief and full forms: *getik/getiki* 'I struck him', *getnuk/getnaka* 'we struck him'.

Stress is syllable-initial. Prosodic phrases receive ultimate or penultimate high tone.

we panš´ kiš´ hi geti?i				'That man killed a dog.'
that man´ dog´ thither he-killed-him				
we panš kiš´ hi geti?i´				'That man's dog killed him.'
that man dog´ thither he-killed-him				or: 'He killed that man's dog.'
we panš´ kiš hi geti?i´				'That man killed a dog.'
that man´ dog thither he-killed-him				

Nominals may be derived with no formal change from other nouns (*kiča* 'woman' > 'wife'), or other parts of speech (plural gerundive *pešmank* 'fliers' > 'duck', from *peš-* 'fly'). They may be compounds with or without formal change (*kiš ?atin* 'big dog' > 'horse'; *hana ša?* 'house mouth' > *hanša?a* 'door'). Only some nouns, mainly referring to humans, have plural forms. Possessive pronouns may precede: *?iš keta* 'my friend'. Relational nouns or postpositions may follow: *hana segis* 'house inside' = 'the inside of the house', *hana=nki* 'house=in' = 'in the house'. Postpositions also mark directions, instruments, beneficiaries, and companions.

Verbs may be conjugated directly or with auxiliaries. Auxiliaries distinguish position: horizontal, vertical, and neutral. The horizontal auxiliary can be derogatory when applied to humans. Tense/aspect/mode distinctions include future, aorist (past or present), periphrastic aorist (for states), continuative (in progress), usitative (customary), necessitative ('must'), desiderative ('want to'), imperative, polite imperative, hortatory ('let's'), permissive ('let me'), various participials, conditional, gerund, and gerundive. First and non-first (2/3) persons are distinguished, singular and plural number, and agent and patient case. Arguments of verbs like 'feel cold', 'die', 'become wearied', 'be greedy', 'taste, feel', 'suffer pain', 'sleep, fall asleep', and 'shiver' show the same form as the patients of transitives like 'strike' or 'bite'. Verbs are also marked for occurrence number. There are also causatives (*tuči-* 'to cook', *tučpaki* 'he made me cook it') and benefactives (*tuča·ki* 'he cooked it for me').

A verb alone may constitute a complete clause. Basic constituent order is SOV, very fluid in main clauses but regular in subordinate clauses, which are frequent.

?iš susbi ?iš gampi ne´ gapɪk´, hu·hup´ ču·´,							
my gun my ammunition likewise take-CONN lake-to going-CONN							
'Taking my gun and my ammunition, going to the lake,							
hu·tanki´ nahpi·g´, gastank hup´ našmi·g´ ču·g´, ʒu?unk´ kamčin getiki´:							
boat-in cross-CONN north to hunt-CONN soon over kill-1SG							
crossing over in a boat, I hunted toward the north and soon killed a deer.' (Kimball p.c.)							

CHUMASHAN FAMILY*

NORTHERN CHUMASH
- **Obispeño:** *Northern, Southern*

SOUTHERN CHUMASH
- CENTRAL CHUMASH
  - **Purisimeño**
  - **Ineseño**
  - **Barbareño:** *Santa Barbara-Goleta, Dos Pueblos*
  - **Ventureño:** *Mugu, Malibu, Shisholop, Matilija, Ojai-Santa Paula-Sespe-Castac*
- **Island Chumash = Ysleño:** *Cruzeño, Roseño*

The Chumash (from their term *č^{h}umaš* 'islander'), inhabited an area along the California coast from just north of Los Angeles near present Malibu to beyond San Luis Obispo, inland to the San Joaquin valley, and on three offshore islands: Santa Cruz, Santa Rosa, and San Miguel. They were the first Californians to encounter Europeans, meeting Cabrillo in 1542. During the late 18th and early 19th centuries, they were drawn into five missions: San Buenaventura, Santa Barbara, Santa Ynez, La Purisima Concepción, and San Luis Obispo, the sources of their Spanish names. The classification here is from Kathryn Klar (p.c. 1994) and John Johnson (p.c. 1995). The Island dialects were quite similar. Degrees of intelligibility among the Central Chumash are not entirely clear, partly because of multilingualism. Barbareño and Ineseño may have been dialects. Emigdiano, perhaps a late variety of either Barbareño or Castac, was spoken inland about 40 miles southwest of Bakersfield chiefly by fugitives from an 1824 mission rebellion (Beeler & Klar 1977, John Johnson p.c. 1995). Kroeber reported another dialect, Cuyama, but it is unattested. The family died with the last known fluent speaker of Barbareño, Mary Yee, in 1965.

Early sources are primarily wordlists: Costansó in 1769 (1910), Fages in 1775 (Chapman 1915), Coulter in 1832 (Scouler 1841), Arroyo de la Cuesta in 1833-7, Duflot de Mofras in 1842 (1937), Jimeno in 1856 (Taylor 1986), Loew in 1876, Pinart in 1879 (Heizer 1952), Henshaw in 1884 (Heizer 1955), and Gould in 1887. Emigdiano is known only through two wordlists recorded by Merriam in the early 20th century (Beeler & Klar 1977). Early texts include confesionarios from 1798 and 1823 (Kelsey 1979, Beeler 1967) and an 1891 translation from Spanish (Heizer 1955). Kroeber published a sketch of Ineseño (1904: 31-42) and discussed subgrouping (1910b: 264-71).

Much of the early material was sadly inaccurate phonetically. Fortunately J.P. Harrington began reeliciting the lists 1913. He continued work with Chumash until his death in 1961. His primary source for Obispeño was Rosario Cooper, for Purisimeño and Ineseño María Solares, for Barbareño Juan Justo, Luisa Ignacio, her

daughter Lucrecia García, and her granddaughter Mary Yee, for Ventureño Fernando Librado, Simplicio Pico, Cecilio Tumamait, and José Juan Olivas (inland). Several major works have been based on this material: an extensive grammar and dictionary of Ineseño (Applegate 1972), a sketch and lexicon of Cruzeño (Beeler & Klar ms), and a reconstruction of Proto-Chumash (Klar 1977a). Beeler, who worked with Mrs. Yee from 1954 to 1965, published a sketch of Barbareño (1976) and texts with lexicon and notes (Beeler 1978a, Beeler & Whistler 1980). Discussions of names are in Beeler 1957, Applegate 1974a,b, King 1975, and Klar 1975, 1977b, of numerals in Beeler 1964 and Klar 1980, and Proto-Chumash person and number markers in Klar 1981. Examples cited here are Ineseño from Applegate 1972.

On the basis of the early wordlists Chumash was recognized as a distinct family in Powell 1891. Dixon and Kroeber posited certain structural similarities between Chumash and its northerly neighbor Salinan in 1903 and suggested in 1913 that the two formed a genetic unit they termed 'Iskoman', cautioning that the evidence was still 'scarcely a matter of demonstrable proof'. In 1917 Sapir tentatively included 'Iskoman' in the Hokan stock, a grouping reiterated by Dixon & Kroeber in 1919 and Sapir in 1925. Because Chumashan data remained scant, evidence for Hokan affinity was drawn primarily from Salinan. When Harrington's data became available, Klar compared all existing Salinan material with all data from the neighboring Chumash, and discovered that they shared only one lexical item, 'white clam(shell)', which served as currency (1977). The term was probably borrowed by Salinan speakers from the Chumash. There thus remains no evidence for including Chumash within Hokan.

The Chumashan languages have rich, nearly identical consonant inventories. Ineseño contains distinctive bilabial, apical, velar, and uvular stops (*p, t, k, q*), apical and palatal affricates (*c, č*), and apical, palatal, and uvular fricatives (*s, š, x*). All obstruents occur plain, glottalized, and aspirated, although the aspiration is of secondary origin. Laryngeals are *ʔ* and *h*. Resonants *m, n, w, l, y* occur plain and glottalized and are automatically devoiced syllable-finally. There are three high vowels (*i, i̓, u*) and three low vowels (*e, a, o*). Stress is usually penultimate.

All of the languages show regressive sibilant harmony, whereby all sibilants within a word are either apical (*s, c*, etc.) or palatal (*š, č*, etc.): Ineseño *s-api-čʰo-us* -> *sapičʰolus* 'he has a stroke of good luck'; *s-api-čʰolus-waš* -> *šapičʰolušwaš* 'he had a stroke of good luck'. (The two positions are otherwise distinctive: *sex* 'chaparral bush', *šex* 'sardine'.) Apparent changes in the productivity of the process over the 20th century are discussed in Beeler 1970, Applegate 1972, Harrington 1974, Klar 1977, and Mithun 1997. There are also several vowel harmony processes (Applegate 1971). Among these is a regressive backing harmony of low vowels within stems: *s-wala-nax-pey* -> *swelenexpey* 'he is leaning'; *s-aqta-p̓ow* -> *soqtop̓ow* 'it veers off'. The harmony is stopped by a high vowel: *s-axtipal-pok̓-in* -> *saxtipolopk̓in* 'he inflates it'.

There is some evidence of sound symbolism (Harrington 1974, Klar 1977: 130): Ineseño *kalaš* 'breathe', *kanaš* 'pant'. There was also earlier ablaut both within and across dialects. Common alternations involve consonants *q* and *x*, and vowels i and *u* in affixes and *e* and *o in stems*: *wek̓ey* 'lie scattered', *wok̓oy* 'lie, be prone'. All of the dialects also show numerous additional phonological processes, particularly vowel epenthesis and syncope, assimilation, and shifting glottalization.

Pronominal prefixes on nouns usually refer to the possessor: *k-ʔap* 'my house'. The prefixes distinguish first, second, and third persons, and singular, dual, and plural numbers. Nominals are typically preceded by an article: *ka=k̓-ap* '(the)=my-house'. Number is not usually distinguished on nouns, although plurality may be indicated by a suffix (*ma=k-ičtiṅ-wuṅ* 'the=my-child-PL' = 'my children') or by reduplication (*ma=kič-kičtiṅ* 'my children'). Several affixes derive denominal nouns: *mi-čʰumaš* 'LOC-islander' = 'Santa Cruz Island'; *ʔalap-mi-cqanaqaṅ* 'RESIDENT-LOCATIVE-Ventura' = 'a Ventureño'. Others derive denominal verbs: *mi-čʰumaš-in* 'speak Cruzeño'. Nouns with pronominal prefixes may function as predicates: *p-ʔiniyu* 'you are an Indian'.

On verbs, pronominal prefixes refer to subjects and pronominal suffixes to objects. *k-čamiṅ* 'I-know', *š-telmemen-it* 'he touches me'. In place of an object suffix there may be a reflexive (*kšuninapay-šṵ̓* 'I saved myself'), a reciprocal (*pišʰuniwatma-niš* 'you two missed each other'), or a plural object suffix (*kšaxšil-š* 'I fish; cause many to bite'). Other suffixes mark past time, direction away, imperative, and interrogative.

Between the pronominal prefixes and verb root are a vast number of inner prefixes; Applegate isolates over 150 in Ineseño. They vary considerably in productivity. Among the most productive are a negative imperative (*p-al-ʔuw* '2-PROHIBITIVE-eat' = *paḷu* 'Don't eat it!'), a subordinator (*ma=k-al-su-ʔinu* 'the=1-SUBORDINATOR-CAUSATIVE-true' = *makasuʔinu* 'what I believe in'), a transitivizer (*ni-k̓ot* 'to break (transitive))', a comitative (*nu-naʔ* 'COMITATIVE-go' = 'to take'), a desiderative (*s-sili-čʰoʔ* '3-DESIDERATIVE-stop' = *šʰiličʰoʔ* 'he wants to stop'), and a causative (*su-wayan* 'CAUSATIVE-hang' = 'to lift').

Other inner prefixes add temporal meanings like 'slowly', 'habitually', 'continually', 'suddenly', 'for a moment', 'repeatedly', or 'at night' (*uni-naṅ* 'to go by night'). Some add spatial meanings like 'on', 'toward', 'heaped up', 'deep', 'in linear order', 'penetrating into', 'upright', 'adjacent', 'against', and 'around' (*maquti-naṅ* 'to run around'). Some describe an instrument or medium, such as the mouth, feet, legs, body, a long thin object, rope, pliable object, fire, liquid in motion, air, or rain (*taya-kum* 'rain-arrive' = 'to drizzle'). Some describe kinds of actions, contributing meanings that are carried by roots in other languages, such as eating, following, hearing, cutting, grinding, or sewing (*axuti-nik̓oyi* 'sewing-return' = 'to sew back over'). Some verbalize roots with nominal or numerical meaning: *s-aqni-wi* '3-

resembling-deer' = 'it resembles a deer'; *naq-skumu* 'being.abreast-four' = 'to be four abreast'. Prefixes cooccur: *iwa-su-api-uš-qiwin* = MOMENTARY-CAUSATIVE-quickly-out-water.to.subside' = *iwašapušqiwin* 'to bail for a while'. Reduplication is extensive, indicating distribution, intensity, or iteration (Applegate 1976).

Verbs may be nominalized in several ways. A verb inflected for third person singular may serve as a noun: *s-pey* 'it-blooms' = 'flower'. An article may signal nominalization: *ma-k-aqšiyik* 'what I like'. The subordinating prefix, with initial glottal, serves as an agentive nominalizer: *ʔal-mati-nan* 'SUBORDINATOR-feebly-go' = 'the one who slinks' = 'coyote'. Various suffixes derive specific kinds of nominals: *uliš-ʔiʔ* 'grasp-INSTRUMENTAL' = *ʔulišʔ* 'handle'; *mes-muʔ* 'cross.over-LOCATIVE' = 'bridge'.

Verbs may serve as whole sentences in themselves, or be followed by noun phrases or other adjuncts, linked by a particle. Any constituent may appear initially for emphasis: *ma-k-niʔ s-axwil ha-ʔoʔ* 'the-my-neck it-reach the-water' = 'The water reaches to my neck.' When nominals appear initially, verbs may be set off with particles and/or subordinated, yielding cleft constructions: *ma-k-niʔ ha=l-axwil ha-ʔoʔ* 'the-my-neck the-SUBORDINATOR-reach the-water' = 'My neck is where the water reaches to.' Embedding, including relativization, is frequent.

The lines below are from an Ineseño text analyzed by Applegate (1972: 529-39).

hinisleʔ	*eč*	*ašup,*	*šiyamš*	*aʔoʔ.*
hini=s-pleʔ	*heča?*	*ha=šup*	*s-iyam-š*	*ha=ʔoʔ.*
when=3-perish	this	the=world	3-be.filled.with-IMPRF	the=water

'When this world perished, it was full of water.

hawal	*imaqutikoḱ*	*kaʔ*	*nišaqšan*
hawala	*hi=maquit-koḱ*	*ka*	*ʔini-siaqša-Vn*
only	CONNECTOR=x-(bird).to.peck	PREDICATIVE	NEGATIVE-3-die-PROCESS

Only Woodpecker did not die . . .

pakaṡ	*apoṅ*	*alaqlaqlil,*	*nox*	*asaqlil*
pakaṡ	*ha=poṅ*	*ha=l=aqilil-R,*	*nox*	*ha=s-aqilil*
one	the=tree	the=SUBORD=show-CONT	big.one	the=3-show

One tree was all that showed, a big one.

maqutikoḱ	*iʔalapay*	*apoṅ*	*silikin*
maqutikoḱ	*hi=ʔal-apay*	*ha=poṅ*	*s-ilikin*
Woodpecker	CONNECTOR=AGENTIVE.NOMINALIZER-be.up	the=tree	3-sit

Woodpecker sat up in the tree.'

Coahuilteco*: *Pajalate, San Antonio, Rio Grande . . .*

Coahuilteco, spoken in south Texas and into Mexico into the 18th century, is known primarily through an 88-page bilingual Spanish-Coahuilteco confessional by the Franciscan Bartolomé García of Mission San Antionio de la Espada. It was published in 1760 in Mexico as a *Manual para administrar los santos sacramentos . . . a los indios de las Naciones: Pajalates, Orejones, Pacaos . . . y otras muchas diferentes*. Based on this material, Swanton compiled Coahuilteco-English and English-Coahuil-teco glossaries in 1940. In 1962 two manuscripts were discovered together, one a draft of the 1760 volume entitled *Confesionario de Indios*, the other a wordlist with verb paradigms by Gabriel Vergara dated 1732 and entitled *Cuadernillo de la llengua de . . . Pajalates* (Troike 1978). Both are described in Troike 1967a. The dialect is identi-fied as Pajalate, one of several. The language was apparently used as a lingua franca among the missions. From these materials, and notes from explorers and missionaries, Troike produced a grammar (1959), a major grammatical sketch (1996), a note on Nahuatl loanwords (1961), a refinement of the Swanton lexicon (1963), a comparison of Coahuilteco and Tonkawa structure (1967b), and a description of concord (1981).

Various proposals have linked Coahuilteco to other languages of south Texas. In Powell 1891 it was grouped with Comecrudo and Cotoname in a family termed Coahuiltecan (Gatschet's Paikawa). In 1915 Swanton proposed a subgrouping, with Coahuilteco, Comecrudo, and Karankawa in one branch, and Cotoname and Tonkawa in the other. Sapir incorporated this unit into his hypothesized Hokan-Coahuiltecan stock in 1920 and joined this stock in turn to Siouan in 1929. Sapir's classification is discussed in Manaster Ramer 1996a. Possible links to Algonquian were investigated in Haas 1954 and Gursky 1963. At present Coahuilteco is generally considered a language isolate (Goddard 1979d, 1996).

The description of the language given here is drawn from Troike 1996. Troike identifies 24 consonants: plain stops *p, t, c, č, k, kʷ*; ejectives *ṕ, ť, ć, č́, ḱ, ḱʷ (ʔ)*; fricatives *(θ), s, š, x, xʷ, h*; nasals *m, n*; laterals *l, ĺ*; and glides *w, y*. (García represented the ejectives with an apostrophe after the consonant.) There are 10 vowels, *i, e, a, o, u* and *i·, e·, a·, o·, u·*, and rhythmic lengthening on alternate syllables.

On verbs, pronominal prefixes specify core arguments: *ta-x-u·m* 'me-you-tell' = 'you have told me'. Three persons and two numbers are distinguished. There are several pronominal paradigms: an intransitive set for present tense main clauses, a transitive set for present or past main clauses, a set for past tense questions, a set for irrealis clauses, a set for subordinate clauses, and a set of reflexives. Plurality can be shown by a marker within the verb stem: *kʷa·ncam* 'die (SG)', *kʷ-ak-a·ncam* 'die (PL)'. Various markers may follow the stem. Among them are a causative (*-xo·* 'to

know', *-xo· wako·* 'to teach'), perhaps a completive or reflexive, durative, pretensive ('pretend to'), or pejorative. Next may be a second person plural subject, second person plural object, intensifier, repetitive, or reversive. Following these may be a desiderative, then a negative, then dubitative, then past tense marker for main clause questions, past tense marker for main clause statements with third person subjects, future for main clauses, or future for subordinate clauses. The interrogative marker appears finally. These last two can be seen in *mamay-na·ko yam e·* 'you-think PAST INTERROGATIVE' = 'Have you thought?' Verbs may be nominalized with the subordinating prefix *pa-*: *xa-pa-txam* 'your-SUBORDINATOR-dwell' = 'your house'.

On nouns, pronominal prefixes may specify possessors. Nouns for inalienable possessions must contain a pronominal prefix: *xa-pa·m* 'your-child'. Alienable possession may be indicated either by a prefix or an independent possessive pronoun based on the verb 'to own', such as *xami·* 'your'. Plurality may be shown within noun stems by markers similar to those in verbs (*pa·m* 'child', *ap-ak-am* 'children'), though it is more often indicated by the form of a following demonstrative. The demonstratives also register the case of the nominal, relative proximity, whether the referent is human, non-human, or a place, and, if the nominal does not represent the subject, the person of the subject of the clause (Troike 1981). Such distinctions can be seen in the sentence *Dios tupo·n naxoxle·wal wako·* 'We annoyed God', where the demonstrative *tupo·n* following the object 'God' specifies neutral distance (*tu-*) human singular (*po·*) and concord with the first person subject 'we' (*-n*).

Basic constituent order is SOV, though the focus of questions is initial and heavy complements may follow the verb: *cin Anillo a-pa·-n na-k-a·x* 'I ring PROXIMAL-HUMAN.PL-1 I-you-give' = 'I give you this ring.' (The demonstrative *apa·n* 'this' carries a suffix *-n* showing concord with the subject 'I'.) Full noun phrases generally show the order NOUN MODIFIERS DEMONSTRATIVE: *pi·lam apšapa·n tupa·t* 'people good the' = 'the good people', in which the demonstrative *tupa·t* indicates neutral distance (*tu-*), human plural (*pa·*), and concord with a third person subject (*-t*). Relative clauses occupy the same position as other modifiers, following the noun: . . . *tawaxa·yo pi·lam mak-pa-xle·wal wako· tu-če·-m* 'all people they/you-SUBORDINATE-anger CAUSATIVE NEUTRAL.DISTAL-NON.HUMAN.PL-2= '[You must pardon] all the people who angered you.' (The final demonstrative *tuče·m*, part of the complex object 'all the people who angered you', shows concord *-m* with the subject 'you' of 'you must pardon . . .') Object complements also carry demonstratives showing concord with the subject:

cin	*[ux^{w}a·l*	*tu-k^{w}e·-n*	*na-k-pa-ma·s*	*san*	*pa-n]*	*na-ka·wa*	*pam*
I	sky	NEUTRAL-PLACE-1	1-2-SUBORD-see	FUT	SUBORD-1	1-want	INTENSIVE

'I want very much [to see you in Heaven].'

COMECRUDAN FAMILY*

Comecrudo = Mulato = Carrizo
Garza
Mamulique = Carrizo de Mamulique

Relatively little is known about most of the languages spoken in south Texas and along the lower Rio Grande before contact, apart from Tonkawa, Coahuilteco, and Karankawa. A number of other languages were mentioned by explorers and missionaries. For some of these, certain guesses can be made about their genetic relationships from the scant material that exists, primarily vocabularies recorded by Jean Louis Berlandier and Rafael Chowell in 1828-9 on an expedition for the Mexican Boundary Commission. For others, data are simply too sparse. In Powell's 1891 classification two of these languages, Comecrudo and Cotoname, were grouped with Coahuilteco into a family termed Coahuiltecan. They now appear to be unrelated. Surveys of the material are in Swanton 1940 and Goddard 1979d.

Comecrudo is the name given to a language recorded by Berlandier around 1829 near Reynosa, Tamaulipas on the lower Rio Grande. He labeled the 148 words he collected 'Mulato'. In 1861 a German traveler, Adolph Uhde, published a travelogue that included a short vocabulary from the same language, which he termed Carrizo (1861: 185-6). Gatschet discovered descendants of the last speakers in 1886 at Las Prietas near Camargo, Tamaulipas. None was fluent, but three of them, Emiterio, Joaquin, and Andrade, remembered a substantial vocabulary and provided sentences, and a small text (Swanton 1940: 55-118). Goddard (1979) sees sufficient similarity between this material and vocabulary collected by Berlandier from the nearby Mamulique and Garza to group them into a Comecrudan family (1979).

Cotoname = Carrizo de Camargo*

On the same expedition Berlandier recorded 104 words he referred to as Carrizo de Camargo. During his 1886 visit to Las Prietas, Gatschet obtained additional vocabulary in this language, which he termed Cotoname, from the same Emiterio who had given him Comecrudo and from a man named Santos Cavázos (Swanton 1940: 118-21. Goddard (1979) concludes that any similarities to Comecrudo are due to interference, and that Cotoname constitutes an isolate as well.

COOSAN = COOS = KUSAN FAMILY

Hanis

Miluk = Lower Coquille

The Coosan family consists of two languages originally spoken along the southern Oregon coast. Hanis was spoken around Coos Bay and the Coos River, and Miluk to the south around the South Slough of Coos Bay and the lower Coquille River. Frachtenberg linked the name 'Coos' to the Hanis reduplicated term *kukwis* 'south' (1922a: 305). The family is first attested in Hanis vocabularies collected in 1856 by Dr. John Milhau (Grant 1996). In 1885 Dorsey elicited 104 nouns, some numbers, and some pronouns in Miluk. In 1903 St. Clair recorded notes on Miluk and collected texts in Hanis from Jim Buchanan and Tom Hollis. In 1909 additional material was collected by Frachtenberg from Jim Buchanan and from Frank Drew, who knew both Hanis and Miluk. Both sets of texts and a list of vocabulary from them appear in Frachtenberg 1913a, which provided the basis for the grammatical sketch in Frachtenberg 1922a. In 1933 and 1934 Melville Jacobs recorded extensive textual material primarily in Miluk from Annie Miner Peterson, who knew both Miluk and Hanis, and made phonograph recordings of myths and songs. Many of her texts appear in Jacobs 1939 and 1940. Finally in 1942 Harrington recorded vocabulary and placenames in both languages from Mr. Drew and in Hanis from Lottie Jackson Evanoff. As far as is known, Miluk was last spoken in 1939 by Mrs. Peterson, and Hanis in 1972 by Martha Johnson (Don Whereat p.c. 1992). A survey of all extant materials is in Grant 1996.

The relationship between the two languages was already clear in the 19th century. Frachtenberg compared the Miluk material from Dorsey and St. Clair with his own Hanis and confirmed that the languages were related but distinct (1914: 141-9). Jacobs equated their distance to that between Dutch and High German (1939: 5). Pierce questioned the relationship, suggesting that similarities might be due to contact (1965), but it is generally felt that the relationship is valid. Differences in numbers are attributed to contact between Miluk and Upper Coquille Athabaskan to the south. Phonological and grammatical developments have obscured similarities between pronouns. Deeper relationships with other Oregon languages are probable. Around 1916 Sapir pointed out similarities among Coos, Takelma, and other languages hypothesized to be Penutian (Sapir 1929, Sapir & Swadesh 1953). In his 1918 manuscript grammar of Alsea, Frachtenberg noted resemblances to Alsea and Siuslaw. The possibility of a relationship among these three is further examined in Buckley 1987 and Grant 1997.

Coos has a rich consonant inventory typical of languages of the Northwest Coast. The phonetic transcription of Frachtenberg, Jacobs, and Harrington is analyzed and

normalized in Pierce 1971 and Zenk 1990b. Zenk (1990b: 572) posits three series of stops: aspirated, represented as *p, t, c, č, ƛ, k, kw, q, ʔ*; plain optionally voiced *b, d, ʒ, ǯ, λ, g, gw, ɢ*; and ejective *p̓, t̓, c̓, č̓, ƛ̓, k̓, k̓w, q̓*. There are two series of continuants: voiceless *s, š, ɬ, x, χ, h* and voiced *m, n, l, γ, w, y*. The laterals and nasals may be syllabic: *n̩háuˇc* 'I make it'. Vowels appear short (*i, e, a, u, ə*) or long (*i·, e·, a·, u·*). Stress is distinctive. Examples cited here are Hanis from Frachtenberg 1922a unless otherwise specified. His transcription is preserved except for substitutions of some modern symbols. Glottal stop is represented by *ʔ* for his superscript epsilon ᵉ, ejectives with raised apostrope (*p̓*) for his exclamation point (*p!*), *ɢ* by *š*, *ts* and *tc* by *c* and *č*, lateral affricates as *ƛ, λ, ƛ̓* for his of *ɬ, ʟ, ʟ!*, and *ɛ* as *ə*. Length and gemination are shown by a raised dot (*a·, m·*) for his macron (*ā, m̄*).

Low vowels *e* and *a* show complex patterns of alternation. Stem vowels alternate under the influence of certain suffixes: *cxau-* 'to kill', *cxéwə* 'kill him!'; *ncxaú·wat* 'I kill him', *ncxewéi·ɬ* 'she kills me'. Certain suffix vowels alternate under the influence of stems: *iɬ nc̓wél-e* 'they with fire are'; *nmúl·aq-a* 'with an arrow he is'.

Stems take on grammatical status as verbs or nouns only with the addition of suffixes. There is no incorporation or other compounding. Reduplication of various kinds is common, primarily with verbs. Initial reduplication indicates intensity of action, repetition, duration, and customary action: *ti·w-* 'to coil', *n=titi·wé·wat* 'I am coiling it'. Final reduplication indicates distribution, mutuality, and, with intransitives, an action performed now and then: *kwátis* 'dream', *kwa·tisiséni·* '(he) is constantly dreaming'. Some semantically verbal stems encode the number of absolutive participants as part of their meaning: *qáqaɬ* '(one) sleeps', *címsimt* '(several) sleep'; *cxau-* 'kill (one)', *aiw-* 'kill (many)'; others are verbs meaning 'do', 'travel', 'lie', 'fly, jump', 'die', 'speak', 'sit, live', and 'put in'. Some primarily nominal stems also encode number: *á·la* 'child', *hí·me* 'children', as well as 'woman', 'man', 'old man', 'human being', 'hunchback', and adjectives 'small', 'short', 'tall', and 'big'.

Several verbal suffixes affect valency. Transitivizers *-t* and *-c* are common, sometimes implying causation: *xpi·* '(it) burned down', *nxpi-t* 'I burned (it)'; *ƛ̓kwi·* 'blanket', *ƛ̓kwi-t* '(she) covered (them)'; *cuwéhλ* 'grease', *ncú·hλ-c* 'I greased (it)'. There is another causative suffix *-iyat: ƛ̓e·c* '(he) went out', *ƛ̓c-í·yat* '(he) took (him) out'. An applicative *-a·ya* adds a beneficiary, goal, or source participant: *ła* '(he) went', *łac-á·ya* '(he) went after it'; *nəq* '(he) ran away', *nəq-á·ya* '(he) ran away from it'. A suffix *-aai* appears with reduplicated stems to form intransitive verbs with implied indefinite objects: *kwátis* 'dream', *kwitkwát-aai* 'he was dreaming'. There is a reciprocal *-meu*: *iɬ sqácə-meu* 'they seize one another'. Reflexives are formed with suffixes: *nƛ̓hác* 'I dressed (him)', *ƛ̓hác-qəm* 'she dressed (herself)'. A suffix *-ém* indicates an indefinite agent: *łatcáya* '(he) goes after (it)', *łacu·t-ém* 'somebody went after (it)'. Middles can be formed with a suffix *-i·/-e·*: *yú·qat* '(they two) split it',

yú·q-ę· 'it split'. There are present, past, and causative passive suffixes: *šu·λ-* 'burn', *šəǎ́·λ-u·* 'fire is being set (to houses)'; *aiwit* '(he) killed (them all)', *iɬ aiaé?w-a·yu* 'they were killed'; *nła* 'I go', *nɬá-at* 'I was carried away (caused to go)'.

Several suffixes are aspectual. There is an inceptive *-i·we*: *qaλu·w-í·we* 'she begins to eat'. Frequentatives indicate repetition, frequency, or duration, and often appear with reduplicated stems: *lau lítu·c* 'she put them down', *λehéu ne·laᵘ hithi·tuw-é·waɬ* 'side by side she put them down'. Inchoatives add the meaning 'become': *tú·miλ* 'old man', *ntúmiλ-nc* 'I change into an old man'; *hém·is* 'big', *hém·ist-u* 'it is getting bigger'. Some suffixes distribute reciprocal or iterative actions ('to and fro', 'up and down'): *nckwic* 'I speared him', *iɬ cakwkw-éni·* 'they continually spear one another'; *ƛ́e·č* 'he went out', *nƛ́e·čič-éni·* 'I keep on going out and coming in'.

Present participles can be formed with the suffix *-č*: *hak-* 'to crawl', *qawil·aí·we xhák·i-č* '(he) commences to look around crawl-ing'. There is also a past participle *-a·y·au*: *ntc̓pat* 'I braid it', *c̓p-á·y·au k̓a·* 'braid-ed ropes'.

Pronominal clitics distinguish first, second, and third person, inclusive and exclusive first person dual, and singular and plural number. Subjects of intransitive verbs are indicated by proclitics: *n=tʰálac* 'I dance', *n=xáyat* 'I am whittling'; *ę?=čáat* 'you walk', *ę?=təqa* '(you) wake up!' Third person singular subjects are unmarked: *ła* '(he) went', *nəq* '(he) ran away'. (Plurals are indicated with free forms: *iɬ c̓u·* 'they went to bed'.) Subjects of transitive verbs with third person objects are indicated with the same proclitic: *n=ílxac* 'I looked at (him)', *n=sqáca* 'I seized (them)'; *ę?=wutxaí·ta* 'you should take (them) home', *wutxaí·yat* '(he) brought (them) home'. Plurality of third person objects can be emphasized with the suffix *-i·təx*: *łaa-í·təx* '(she) dragged them'. Objects of transitive verbs with third person subjects are also specified with the same proclitics: *n=túhic-u·* 'he hit me', *ę?=túhic-u·* 'he hit thee'. The presence of the third person subjects (ergatives) is marked by the suffix *-u·* for singulars and *-iɬ* for plurals. Combinations of first and second persons are indicated with a second person proclitic and the suffix *-a·mi* 1/2 or *-a·is* 2/1: *ę?=ła-á·mi* = 2=go-1/2 = 'I take you along'; *ę?=sqac-á·is* = 2=seized-2/1 'you seized me'.

Nouns may consist of simple stems like *e* 'face' or they may bear a nominalizing suffix: *stú·q* '(he) stood', *stú·wáqw-is* 'wall'; *nqaína* 'I am cold', *qainé-s* 'the cold'; *tʰál-ac* '(he) dances', *tʰal-i·yáwa* 'danc-er'. There is no grammatical gender.

Subjects of transitive verbs may bear an ergative ('discriminative') case marker *x*: *x=šximɬ n=kiɬú·wi-t-u·* (ERG=bear 1=see-TR-3.ERG) 'The bear saw me' (*šximɬ n=kiɬú·wi-t* (bear 1=see-TR) 'I saw the bear'). The marker follows articles: *ká·s túhic hə=x dí·lu·ɬ* (almost hit.TR the=ERG young.man) 'The young man almost hit it.' The ergative marker is generally used when the ergative status of the noun is not obvious, as when a clause contains two overt nominals, or when the ergative is inanimate, an animal, or not represented by a noun: *x=ná·nt lau λúxλúwax* 'many (persons) were clubbing her'. The same marker appears in combination with an instrumental enclitic: *k̓wint x=míl·aq=əč* (shot.at ERG=arrow=INST) 'he shot at him with an arrow'. With a locative enclitic, it yields an ablative: *x=kwil·éλ=e·č n-dji·* (ERG=sweathouse=LOC 1-come) 'I came from the sweathouse'.

The locative *=i·č/=e·č* alone means 'in, at, on, under': *yixéwəx* 'house', *yixéwəx=ę·č* '(he's sitting) in the house'. Direction is shown by *=eč* 'at, in, through, on, into': *yixéwəx=ęč* '(he goes) into the house'. An allative *=ewič* means 'toward': *yixewəx=éwič ŋ-ła* 'house=all I-go' = 'I am going toward the house'. The markers also follow particles, verbs and clauses: *cu· [lə me qaɬ stúq]=ęč hél·aq* (now [that person below stand]=DIR came) 'Now he came to [that person that stood below]'.

Possessive clitics are formed from the articles plus personal pronouns: *he=n kwátis* 'the=1SG dream' = 'my dream'; *lé=iš ékwλeč* 'your (DUAL) father'. Nominal possessors are marked with a particle *u*: *hə héčiɬ u á·la* (the Hetcit POSS child) 'Hetcit's child'.

A large set of particles add tense, aspect, and modal meanings such as 'be about to', 'will', 'intend to', 'used to', 'frequently', 'should, would', 'if'. Many are evidentials: 'it seems', 'I guess', 'I doubt', 'they say', 'certainly', 'evidently': *yúxwe šku hu·méke yúkwe* 'Two women must have gone ashore' (speaker saw tracks on the beach). There is an interrogative *i·*: *cix ux ła i·* (two they go Q) 'Did they two go by here?'.

Word order in Coos is pragmatically rather than syntactically based (Mithun 1987). The most newsworthy information appears early in the clause, followed by more predictable and peripheral information. Subordinate clauses may either precede or follow main clauses, linked by conjunctions: *łaqcú·wat i dji·* 'he waited, as he came'.

A few of these structures can be seen in the lines below from Frachtenberg 1913a: 5. The particle *yu·λ* adds conditional meaning. Transitivers *-t* and *-c* appear in 'try it' and 'dropped it'. Instrumental and directional enclitics are in 'with that soot', and 'into the ocean'. Particles *is* 'we two' and *ux* 'they two' indicate dual subjects.

λéγi·	*il,*	*yu·λ*	*is*	*k̓int.*
good	indeed	if would	we two	try it

'"It would be good if we two should try it.

Təq̓én	*łu·wéč*	*yu·λ*	*is*	*k̓int.*
soot	that with	if would	we two	try it

We ought to try it with that soot here." . . .

Yixé·	*ux*	*tu·wí·tic*	*baltí·miseč.*
one	they two	dropped it	ocean into

They dropped one piece into the ocean.'

ESKIMO-ALEUT FAMILY

Aleut = Unangan: *Eastern (Unalaska), Western (Atkan, Qaxun*, Attuan*)*

ESKIMOAN

YUPIK

SIBERIAN YUPIK = ASIATIC ESKIMO = YUIT

Sirenikski

Naukanski = Naukan = East Cape

Central Siberian Yupik: *Chaplinski, St. Lawrence Island*

ALASKAN YUPIK

Pacific Gulf Yupik = Alutiiq = Suk = Sugpiaq =Sugcestun: *Chugach, Koniag*

Central Alaskan Yup'ik: *Egegik, General (Lake Iliamna, Nushagak R., Bristol Bay, Kuskokwim, Nelson Island), Hooper Bay-Chevak, Nunivak, Norton Sound*

Iñupiaq-Inuktitut

Iñupiaq: Seward Peninsula (Bering Strait at Imaqliq or Big Diomede, Little Diomede, Wales, King Island; Qawiaraq at Unalakleet, Fish River), North Alaska (Malimiutun at Kobuk, Kotzebue; North Slope at Point Hope, Barrow, Nunamiut, Anaktuvuk, Nuiqsat, Aklavik, Uummarmiut)

Western Canadian Inuktun = Inuvialuktun = Mackenzie Coast: Siglit at Sachs Harbor, Paulatuk, Tuktuyaktuk, Inuvik; Copper = Kangiryuarmiut at Cambridge Bay = Iqaluktuuttiaq, Coppermine = Qurluqtuq, Holman Island = Ulukhaqtuuq, Utkuhikhalik; Netsilik at Pelly Bay = Arviligjuaq, Spence Bay = Talurjuaq, Gjoa Haven = Uqsuqtuuq; Caribou = Kivalliq (Hauniqtuurmiut, Qairnirmiut, Harvaqtuurmiut, Ahiarmiut, Paallirmiut)

Eastern Canadian Inuktitut: Aivilik at Rankin Inlet = Kangiqliniq, Chesterfield Inlet = Igluliagaarjuk, Coral Harbour = Sagliq, Repulse Bay = Naujat, Southampton; North Baffin (Iglulik, Grise Fiord = Ausuittuq, Resolute Bay = Qausuittuq, Arctic Bay = Ikpiarjuk, Pond Inlet = Mittimatalik, Clyde River = Kangiqługaapik; South Baffin at Cape Dorset = Kinngait, Pangnirtung, Frobisher Bay = Iqaluit; Arctic Quebec (Itivimmiut at Povungnituk = Puvirnituq, Point Harrison = Inujjuaq, Great Whale River = Kuujjuaraapik, Belcher Island = Sanikiluaq, Tarramiut at Fort Chimo = Kuujjuaq, Wakeham Bay = Kangiqsujuaq, Saglouc = Salluit); Labrador at Nain, Rigolet = Tikiraqsuarusik

Greenlandic Kalaallisut: North Greenlandic = Polar Eskimo at Thule; West Greenlandic (Upernavik, Northwest Greenlandic at Egedesminde, Jacobshavn, Godhavn, Umana; Southwest Greenlandic at Kap Farvel, Nanortalik, Julianehab, Frederikshab, Sukkertoppen), East Greenlandic at Ammassalik = Tasiilaq, Scoresbysund = Ittoqqortoormiit

The Eskimo-Aleut family covers a vast area stretching from Siberia to Greenland. It has two main branches, Aleut, spoken on the Aleutian Islands off Alaska, and the Eskimoan languages, which cover the remainder of the territory. The relationship between the two branches was first suggested by Cook & King in 1784 and more fully demonstrated by Rask in 1819, who apparently met with Aleuts in Petersburg and Greenlanders in Copenhagen (Thalbitzer 1916, 1921-3). Further comparisons are in Jochelson 1912, Bergsland 1951, 1958, 1962, Marsh & Swadesh 1951 and especially Fortescue, Jacobson, & Kaplan 1994. The Eskimoan branch consists of two main subbranches: Yupik and Iñupiaq-Inuktitut. The Yupik languages are spoken in the Russian Far East and Alaska in what was probably the Eskimo homeland (Krauss 1979: 804, Fortescue et al. 1994: x). Inuit constitutes a dialect continuum stretching from northwestern Alaska to the east coast of Greenland. Divisions among the dialect groups are not sharp, and several groupings have been proposed. That above is drawn primarily from Fortescue et al. 1994. (Not all settlements are named.) A full bibliography of Eskimo sources through the late 19th-century is in Pilling 1887b. Surveys of the family are in Krauss 1973b, 1979, 1980, Woodbury 1984a, and Dorais 1990a. Literature on and in the languages is too extensive to be cited here in its entirety, so these sources should be consulted for further references. Much work is in Russian (on Aleut and Yupik), French (Inuktitut), or Danish (Greenlandic).

When the Aleut first met Russian fur traders in 1745 they were living in at least 160 settlements stretching over 1200 miles from the Alaska Peninsula westward over the Aleutian Islands to Attu (Bergsland 1994). Under Russian domination, they were concentrated into fewer villages and their population sharply diminished. The Aleut territory was divided into two districts, Unalaska in the east and Atka and Attu in the west. The Russian presence did bring widespread native literacy in Aleut. Soon after his arrival in 1824, the Russian Orthodox priest Ioann Veniaminov (1797-1879) engaged Aleut priests Tikhon, Netsvetov, and Salamatov to translate religious material into the language. Veniaminov's 1840 and 1846a,b descriptions of Eastern Aleut are now available in English (Black & Geoghegan 1984, Geoghegan 1944). Around 1800 Western Aleuts from Unalaska were taken to settle on the Pribilof Islands St. Paul and St. George, and in 1826 Eastern Aleuts were settled on the Commander Islands: about 400 Atkans on Bering Island and about 300 Attuans on Copper Island. Soon afterward, large numbers of Russians settled there as well and began intermarrying with Aleuts. An interesting language has resulted, especially on Copper Island, in which stems are primarily Aleut but inflections Russian. (This language, Mednij Aleut, is described in the catalogue under Contact languages.) When Alaska was purchased by the United States in 1867 these Commander Island Aleuts were cut off from their relatives remaining in Russia. The Aleuts suffered great losses in 1942 when the Japanese attacked the Aleutian Islands. Survivors were

resettled on Atka Island in 1945. At present, there are around 400 active speakers of Eastern Aleut generally over age 40, living in six villages (Bergsland 1994). Another 60 to 80 speakers of Western Aleut, including some children, live in Atka, and a handful of elderly speakers live on Bering Island. The Attuan variety is now extinct, though the creolized form is spoken by fewer than 20 people on Copper Island. A third variety was apparently spoken on the Rat Islands between Atka and Attu, but it is nearly unattested. It is sometimes grouped with Atkan into a Central dialect, in opposition to Attuan, which would constitute the Western dialect.

Extraordinary works on Aleut are the dictionary in Bergsland 1994 and grammar in Bergsland 1997b. They incorporate all existing material on the language, including a history of all previous work, and appendices on demonstratives, wind directions, positional nouns, numerals, calendars, kinship terms, ancient personal names, placenames, and loanwords. An important earlier description by Bergsland (1959) includes a history of scholarship in and on the language, names, and texts with translations and notes. Among his other works are texts collected by Jochelson in 1909-10 (1978), an Atkan dictionary (1980), comparative works on Eskimo-Aleut (1958, 1962, 1986, 1989, 1997a), discussions of syntax (1970, 1976, 1989), kayak terminology (1991), and a dialect survey (1992). With speaker Moses Dirks, Bergsland also published an Atkan grammar and lexicon in 1978, school grammar in 1981, and a magnificent collection of 87 additional texts from Jochelson with facing page translations (1990). Prosody is discussed in Oshima 1992, 1994, anatomical terms in Marsh & Laughlin 1956, noun morphology in Marsh 1956, definiteness in Innocent 1976, anaphora in Fortescue 1985a, and ergativity in Leer 1987.

The Eskimo branch of the family is comprised of two major subbranches: Yupik and Iñupiaq-Inuktitut. The five Yupik languages are spoken in the Russian Far East and southwestern Alaska. The first extensive work on Yupik dialectology is in Hammerich 1958. Phonology is reconstructed in Hunns 1970. Prosody is compared in the articles in Krauss ed. 1985, especially Krauss 1985b and Leer 1985a,b.

Sirenikski was originally spoken in the villages of Sireniki and Imtuk on the Chukchi Peninsula in Russia. The last speaker, Wye, died in 1997 in Chukotka. It shows extensive influence from both the unrelated Chukchi and from Central Siberian Yupik. It remained nevertheless quite divergent from the other Yupik languages, and it shows some archaic traits, so it may constitute a third subbranch of Eskimo (Fortescue et al. 1994: x). Prosody is described in Krauss 1985a.

The Naukanski were moved in the mid 1950s from the East Cape to Nunyagmo and Pinakul' in St. Lawrence Bay. Krauss estimates the number of speakers at 70, all over age 40. A grammar in Russian with texts and dictionary are in Menovshchikov 1975. Prosody is described in Krauss 1985a.

Central Siberian Yupik was probably spoken earlier around the entire Chukotka Peninsula in Russia (Woodbury 1984). It is now used only at the southern tip of the peninsula in the area around New Chaplino and Sireniki, at Uel'kal' on the Anadyr' Gulf and on Wrangell Island, as well as on St. Lawrence Island in Alaska. There are about 300 adult speakers in Russia (Krauss 1997); all 1100 permanent residents of St. Lawrence Island know the language (de Reuse 1994b). Most work on the Chaplinski dialect is in Russian, in particular a grammar in Menovshchikov 1962 with further discussion of several topics in 1967 and a dictionary in Rubtsova 1971. For St. Lawrence Island, there are dictionaries in Jacobson 1983, 1987, and Silook 1983, and texts with translation in Angi et al. 1975, Slwooko 1977a,b, 1978, 1979, Slwooko & Kulukhon 1975, Slwooko et al. 1975, Irrigoo et al. 1978, and Apassingok et al. 1985. Grammars are in Jacobson 1979, 1989, and 1990a. Prosody is treated in Krauss 1975, 1985b, and Jacobson 1984a, 1985; ergativity in Vaxtin 1979; and affix order in de Reuse 1988. A major work on the language and effects of areal contact is de Reuse 1994a. Russian work on the language is detailed in Krauss 1973b.

Central Alaskan Yup'ik is spoken by around 10,000 people of all ages in southwestern Alaska (Krauss 1993), though fewer children are now learning it. Five major dialect groups can be recognized: Egegik; General Central Yup'ik of the Yukon, the Lower Kuskokwim, the Upper Kuskokwim, Nelson Island, Bristol Bay, Nushagak River, and Lake Iliamna; Norton Sound at Kotlik and Unaliq; Hooper Bay-Chevak; and Nunivak Island. A major dialect atlas is in Jacobson 1998. Early missionary grammars are in Schultze 1889, 1894, Barnum 1901, and Hinz 1944. Swadesh 1951-2 provides a description of Unaliq and Hammerich 1953 of Nunivak. More recently, Woodbury 1981 provides an extensive grammar of the Chevak dialect and 1984b a collection of texts with translation and tape. For General Central Yup'ik there are teaching grammars in Reed et al. 1977 and S. Jacobson 1995, a brief sketch in Mithun 1996e, a substantial sketch in Miyaoka 1996, and a phrase book with accompanying tapes in A. Jacobson 1995. A magnificent dictionary is in S. Jacobson 1984b and traditional narratives with translation in a volume edited by Orr & Orr 1995. Discussions of traditional masks by elders are in Meade 1996. Additional texts are in Tennant & Bitar 1981 and Mithun ed. 1996. Phonology and prosody are described in A. Mattina 1970, Miyaoka 1976, Hendricks 1982, Jacobson 1984a, Miyaoka 1985a, and Woodbury 1985b, 1987b, 1989, 1992; demonstratives in Jacobson 1982 and Redmond 1996; case in Miyaoka 1985b, 1987, Kitano 1996 and Rubino 1996; nouns and nominalization in Jacobson 1982 and Woodbury 1985c; switch-reference in Payne 1979 and Woodbury 1983; tense in Snyder 1996; aspect in Mithun & Ali 1996; mood in Lasswell 1996; evidentials in Jacobson 1994 and Sellman 1996; the subordinative mood in Miyaoka 1997; rhetorical structure in Woodbury 1983, 1985d, 1987a, 1996a. A paper on the effect of orthography appears in Yup'ik with translation in Afcan 1976. A comparison with Siberian Yupik is in Jacobson 1990b.

Pacific Yupik or Alutiiq, often termed Aleut, is closely related to Central Alaskan Yup'ik. It consists of the Chugach dialects of the Kenai Peninsula and Tatitlek, Valdez, and Cordova, and the Koniag dialects of the Alaska Peninsula and Kodiak Island. Krauss counts about 400 adult speakers, the youngest in their late 20's. Dictionaries are in Leer 1977b, 1978a, 1978b, 1996b, and NBMDC 1978. Phonological description is in Leer 1994 and prosody is discussed in Leer 1985b,c and Rice 1992.

Inuktitut-Iñupiaq (or Inuit or Inuit-Iñupiaq) is a dialect chain stretching from the Bering Strait to Greenland. Adjacent dialects are mutually intelligible but more distant ones are not. Dialect comparisons are in Fortescue 1985b and Dorais 1990c. Krauss (1997) estimates the number of speakers of all dialects together at 75,000 including children, with 3500 in Alaska, 24,000 in Canada, and 47,000 in Greenland. The Alaskan dialects are referred to as Iñupiaq or Inupiaq; the Canadian dialects, spoken by the Inuit, as Inuvialuktun, Inuktitut, and Inuttut (Labrador); and the Greenlandic dialects as Kalaallisut. An accessible history of the language is in Dorais 1993. There are comparisons of phonology in Lipscomb 1991, intonation in Fortescue 1983a, and affixes in Fortescue 1983b.

The Iñupiaq dialects fall into two groups: Seward Peninsula (Bering Strait and Qawiaraq) and Northern (Malimiut and North Slope, including Uummarmiut at the western edge of the Northwest Territories). Early liturgical materials are listed in Krauss 1973b. Dictionaries are in Webster & Zibell 1970, MacLean 1980, and Lowe 1984a; grammars in Lowe 1985a and MacLean 1986a,b; and texts in Kaplan et al. 1988. Kaplan treats phonology (1979, 1981a,b, 1985) and Seiler (1992) suffix order. MacLean 1994 contains an analysis of the interaction of tense, aspect, and demonstratives in two texts, along with the texts and a grammatical sketch.

The Western Canadian dialects stretch along the north coast of the Northwest Territories and adjacent islands. An early comparative vocabulary is in Jenness 1928. The dialects are discussed in Dorais & Lowe 1982, Dorais 1986, and Lowe 1991. Petitot published an early Siglit dictionary with grammatical notes (1876b), Spalding (1960) a grammar of Caribou, and Lowe a Siglit dictionary (1984b) and grammar (1985b), and a Kangiryaurmiut dictionary (1983) and grammar (1985c). Barrow texts are in Jenness 1924 and Kangiryaurmiut (Coppermine) legends are in Métayer 1973. Netsilik (also spelled Natsilik) texts are in Rasmussen 1931. Grammatical relations in Caribou Inuktitut at Baker Lake are discussed in Johns 1987 and kinship terms are in Graburn 1964. Kivalliq (Qairnirmiut, Hauniqturmiut, Paalirmiut, Ahiarmiut) is sometimes combined with Aivilik (Southampton, Rankin Inlet) in a subgroup of Eastern Canadian Inuktitut termed Keewatin (Dorais 1990). A Kivalliq dictionary is in Thibert 1970 and texts are in Owingajak 1986.

The Eastern Canadian dialects are spoken all around Hudson Bay, including the east coast of the Northwest Territories, on Baffin Island to the north, over the west

and north coasts of Quebec, past Ungava Bay and down the east coast of Labrador. The dialects are discussed in detail in Dorais 1976a and 1990. General work on phonology is in Petersen 1970, Dorais 1977a, 1985, and Creider 1981. A substantial grammar is in Schneider 1972-6, and a grammatical sketch is in Lowe 1992. A lexicon is in Dorais 1978a and a substantial dictionary in Schneider 1985. On Aivilik there are grammars in Spalding 1969, 1992, Dorais 1976b, and Sammons 1985, 1993, dictionaries in Thibert 1970 and Spalding 1982, and texts in Spalding 1979a. For the dialects of Baffin Island, there are grammatical descriptions in Schneider 1967, Harper 1974, 1979, Dorais 1975a, 1978a, and Spalding 1979b. Grammars of the Arctic Quebec dialects are in Flint 1954 (a reworking of an 1883 grammar by the Rev. E.J. Peck), Dorais 1975b, 1977b, 1979, 1988, and Trinel 1979; dictionaries are in Peck 1925 (based on Erdmann 1864), Schneider 1970a,b, 1979 and Dorais 1983, and texts in Nungak & Arima 1988. Special treatments of phonology are in Dorais 1980 and Massenet 1977, 1978, 1986. Early work on the Labrador (Inuttut) dialects, described in Dorais 1980, was done by Moravian missionaries, yielding a dictionary (Erdmann 1864) and grammar (Bourquin 1891). More recent descriptions are in Dorais 1977c, Smith 1975, 1977a,b, 1979a, 1981, 1982a,b. Glossaries and dictionaries are in Smith & Metcalfe 1973a,b, Peacock 1974a,b,c, and Jeddore 1976. A general discussion of Inuit linguistic demographics, grammar, lexicology, semantics, sociolinguistics, and ethnolinguistics is in Dorais 1996.

Greenlandic or Kalaallisut may be the only unendangered indigenous speech of North America: it continues to be learned as a mother tongue by all children and is the usual means of communication among Greenlanders. The Greenlandic dialects fall into three groups: North Greenlandic at Thule (Qaanaaq), then the more similar West and East Greenlandic groups. West Greenlandic was the first Eskimo to be described. The Danish missionary Hans Egede arrived in Greenland in 1721 and immediately began work with the language. His son Paul came to help, and extended this work to a dictionary in 1750 and grammar in 1760. The Danish Moravian missionary Fabricius produced a grammar in 1791 and dictionary in 1804. Another Moravian, Samuel Kleinschmidt, himself the son of a missionary stationed in Greenland and a speaker, produced a remarkable grammar in 1851 and dictionary in 1871. Thalbitzer published descriptions in 1904, 1911, and 1930. His student Hammerich described verbal inflection in 1936 and case in 1951. Schultz-Lorenzen produced a dictionary in 1927 and grammar in 1945. Further West Greenlandic grammatical descriptions are in Swadesh 1946c, 1948b, Bergsland 1955, Janussen 1982, Enel 1984, and Fortescue 1984a. Dictionaries are in Bugge et al. 1960 and Berthelsen et al. 1977. Phonological discussions include Underhill 1971, 1976a,b, Sadock 1972, Rischel 1974, 1981, Cearley 1976, and Sadock & Olsen 1976. Rischel has described noun phrases (1971), Nowak tense (1994), Mey reflexivization (1971,

1971-3) and comparatives (1976), Fortescue switch-reference (1991a), and Berge discourse structure (1997). Fortescue has also produced studies of the Upernavik dialect (1984b), and the i-dialect phenomenon (1984c). A grammar of the Northern dialect Qaanaaq at Thule is in Fortescue 1991b. Materials on East Greenlandic include a description in Thalbitzer 1921, a comparison with West Greenlandic in Petersen 1975, notes in Dorais 1981, phonology in Petersen 1976, vocabulary in Gessain et al. 1982, and a full grammar in Robbe & Dorais 1986. A survey of literature in Greenlandic is in Petersen 1984.

Eskimo-Aleut languages offer a number of features of special interest for linguistic theory, so they have often been brought into general linguistic discussions, especially those from the Eskimo side of the family, perhaps most often West Greenlandic. Immediately obvious is their high polysynthesis. The languages are nearly exclusively suffixing, but words typically contain large numbers of suffixes. The languages contain hundreds of derivational suffixes and as many inflectional suffixes. The resulting phonological complexity is addressed in Fortescue 1992b,c. The nature of derivation and its relation to incorporation and syntax has been examined in various frameworks by Sapir (1911), Rischel (1972), Creider (1978), Smith (1978, 1979b, 1981a, 1982), Fortescue (1979, 1980), Sadock (1980, 1985a, 1991), Lowe (1981), Grimshaw & Mester (1985), Woodbury (1985d, 1996b), Woodbury & Sadock (1986), Bok-Bennema & Groos (1988), Broekman & den Dikken (1988), de Reuse (1989), Denny (1989), Jensen & Johns (1989), and Lipscomb (1993). Word order is treated in Fortescue 1993. There has also been considerable discussion of grammatical relations and ergativity within various theoretical models, including Thalbitzer 1930, Hammerich 1951, Mey 1969, Klokeid & Arima 1977, Woodbury 1977a,b, Kalmár 1977, 1979a,b, Lowe 1978, Johnson 1980, Smith 1981b, 1984, Payne 1982, Johns 1984a,b, 1992, 1993, Bittner 1987, 1994, Leer 1988, Bok-Bennema 1991, and Nowak 1993, 1996. The demonstrative systems of the languages are extraordinarily rich and are treated in several papers, particularly Dorais 1971, Bergsland 1951, 1973, Denny 1982, Jacobson 1984c, Fortescue 1988, and Redmond 1996. Subordination and reference in Aleut and Greenlandic are compared in Bergsland 1976.

Especially interesting in light of the high polysynthesis and ergativity of the Eskimo languages is work on the processes by which they are first acquired by children. The acquisition of Arctic Bay Inuktitut is described in Wilman 1988, that of Arctic Quebec in Allen & Crago 1989, 1992, 1993a,b, 1996, and Allen 1997, and that of West Greenlandic in Fortescue 1985c and Fortescue & Olsen 1992.

Eskimo structures will be illustrated here from Central Alaskan Yup'ik. Material is drawn from work with speakers Elena Charles, George Charles, and Elizabeth Ali from Bethel, Alaska. Examples are in the practical orthography developed at the Alaska Native Language Center by Osahito Miyaoka, Irene Reed, Paschal Afcan, and

Michael Krauss. There are series of stops *p, t, c (=č), k, q,* voiced fricatives *v, l, s (=z), y, g (=γ), ug (=γʷ), r (=ʁ), ur (=ʁʷ),* voiceless fricatives, *vv (=f), ll (=ɬ), ss (=s), gg (=x), w (=xʷ), rr (=χ), urr (=χʷ),* voiced nasals *m, n, ng (ŋ),* and voiceless nasals *m̊ (=ɱ̥), n̊ (=n̥), n̊g (=ŋ̊).* Fricatives are automatically devoiced adjacent to voiceless obstruents: *agartaqluki* [aγáχtáqluki] 'she would hang them'. There are three prime vowels *i, a, u,* and schwa, written *e*. The high vowels are significantly lowered before back segments *q, r,* and *a*: *tarvarlua* [táʁváʁloa] 'she smudged me'.

Words are of two principal types: uninflected (particles), and inflected (nouns and verbs). Inflected words consist of an initial root (termed by Eskimologists a 'base'), any number of derivational suffixes (termed 'postbases'), and an inflectional suffix complex (termed an 'ending').

ROOT	DERIVATIONAL SUFFIXES	INFLECTIONAL SUFFIX COMPLEX
BASE	POSTBASES	ENDINGS

Roots are identifiably nouns, verbs, or demonstratives, though there are many related pairs of nouns and verb roots: *pi-* 'thing', *pi-* 'do'; *ciku* 'ice', *ciku-* 'to freeze'.

The inventory of derivational suffixes (postbases) is enormous: Jacobson 1984 lists over 450. Some are suffixed only to noun stems, like *-ngyaar* 'old': *angun* 'man', *angutengyaar* 'old man'. Some are suffixed only to verb stems, like *-aqe-* 'habitually': *qillertaqluki* 'she would tie them'. Some may be suffixed to either noun or verb stems, like *-lkuk* 'no good (noun)', 'no good one (verb)': *ui* 'husband', *uilkua* 'her no-good husband'; *ayag-* 'to leave', *ayalkugtuq* 'that no-good one left'. Some appear primarily with demonstrative roots: *trute-* 'to miss by passing through the area of': *aci-* 'area under', *acitrutaa* 'he missed by going under it'. Of the suffixes that follow nouns, some yield new nouns, like 'old' above. Others derive verbs, such as *-ngqerr-* 'have': *angyangqerrluni* 'he had a boat'. Similarly, some of the suffixes that follow verbs yield new verbs, like *-aqe-* 'habitually' above. Others derive nouns, like the instrumental nominalizer *-un*: *eglerte-* 'to move', *eglerun* 'canoe'. The derivational suffixes serve a variety of functions, including many that are common among languages, marking causation, aspect, or tense. Many modify noun stems like the adjectives of other languages, such as *-pik* 'genuine, real, authentic': *yuk* 'person', *yup'ik* 'an Eskimo of southwestern Alaska'. Many are adverbial, as in *itengnaqraartullruuq* 'he always wanted to enter first' (*iter-ngnaqe-rraar-tur-llru-u-q* enter-try.to-first-repeatedly-PAST-INDIC-3SG). Finally, many convey meanings expressed by noun or verb roots in other languages, such as *-liur-* 'to work with': *neqa* 'fish', *neqliurtuq* 'she's preparing fish'. As might be expected, these derivational suffixes vary in productivity, some occurring in only a few forms, others used pervasively to coin new words. Words can be long: *ayaqaqucuaryuumiitqapiallruyugnarquq-qaa* 'I guess she probably didn't really want to

go for those short little trips, did she?' (*ayag-qaqu-cuar-yuumiite-qapiar-llru-yugnarq-u-q=qaa* 'travel-now.and.then-little-want.not-very-PAST-probably-INDICATIVE-3SG=?).

The inflectional suffixes on nouns distinguish singular, dual, and plural number: *angyaq* 'boat', *angyak* 'two boats', *angyat* 'boats' (three or more). On possessed nouns, the suffixes specify the possessor as well: *angyaqa* 'my boat'. Among possessors, four persons are distinguished but no gender: *angyaqa* 'my boat', *angyan* 'your boat', *angyaa* 'his/her boat', *angyani* 'his/her own boat'. Singular, dual, and plural possessors are also distinguished: *angyaa* 'his/her boat', *angyagket* 'their (du) boat', *angyaat* 'their boat'. The inflectional ending also specifies the case of the nominal: ergative (also termed relative), absolutive, locative (localis), ablative (modalis), allative (terminalis), instrumental (vialis 'by', 'through'), and aequalis ('like, as'). The absolutive is the basic form: *anyaq* 'The boat [is rocking]'. Other cases can be seen in *angyami* '[He's waiting] at the boat' (LOCATIVE), *angyamun* '[Go over] to the boat' (ALLATIVE), *angyakun* '[I'm going to go] by boat' (INSTRUMENTAL). The ergative is used for both transitive agents and to name possessors: *angya-m ilu-ani* 'boat-ERGATIVE interior-LOCATIVE' = 'at the boat's interior' = 'inside the boat'.

The inflectional endings on verbs contain a mood marker followed by pronominal suffixes referring to the core arguments of the clause. The independent moods include an indicative for declarative statements, an interrogative for content questions, and an optative for polite commands and suggestions. The dependent moods link clauses in various ways, with a participial, a subordinative, and six connectives. The subordinative is used more pervasively in Yup'ik than subordinating conjunctions in European languages, linking related sub-events over long stretches of speech, provided they share the same subject. The six connective moods include the contemporative I ('when', in the past), contemporative II ('while'), contemporative III ('at the same time that'), precessive ('before'), concessive ('although, even if'), contingent ('whenever'), consequential ('because'), conditional ('if, when' in the future). Contrasts in mood can be illustrated with the verb *ane-* 'go out': *an'ua* 'I went out' (INDICATIVE), *anllemni* 'when I went out'(CONTEMPORATIVE I), *anvailegma* 'before I go out' (PRECESSIVE), *an'aqama-wa* 'whenever I go out' (CONTINGENT), *anyuqma-wa* 'because I want to go out' (CONSEQUENTIAL), *ankuma* 'if I go out' (CONDITIONAL). The pronominal suffixes distinguish four persons and three numbers, like those on nouns. Those on intransitive verbs specify one participant: *an'u-q* 'I went out', *an'uten* 'you went out' *an'u-q* 'he/she/it went out', *an'u-kuk* 'we two went out', *an'u-kut* 'we all went out', *an'u-tek* 'you two went out', *an'u-ci* 'you all went out', *an'u-k* 'they two went out', *an'u-t* 'they all went out'. Those on transitive verbs specify two participants: *nutegar-qa* 'I shot him/her/it', *nutega-anga* 's/he shot me'. The transitive suffixes are similar in form to the possessive suffixes on nouns.

Nominal case follows a basic ergative/absolutive pattern. Only those participants

that are identifiable to the hearer and of a certain importance are given absolutive status, however. Many clauses that would be transitive in English, such as 'I picked herbs', are intransitive in Yup'ik, with the indefinite semantic patient ('herbs') in an oblique (ablative) case. Basic constituent order is SOV, though, as in many languages, nominals frequently appear outside of this nuclear structure, to the left for topicalization or focus, or to the right for information of less central importance. Complement clauses generally precede main clauses.

Some of these structures can be seen in the excerpt below from a narrative told by Mrs. Charles to her children. The first word *maurluqa* 'my grandmother' contains a possessive suffix 'I/her' and is in the absolutive case, because the clause 'I used to pick Labrador tea' is grammatically intransitive; the tea is indefinite, so does not count as a core argument. The last word, *maurluma* 'my grandmother' is in the ergative case, because that clause is transitive: 'My grandmother customarily did this.' Two other cases can be seen here, the allative in 'she hung them inside the house', and the locative in 'she let them hang a long time inside the house'. The first describes motion toward a goal, taking the leaves into the house, the second location at a point, leaving them inside. Another allative appears in 'she let me stand right in front of the door', again motion to a goal. Several moods can be seen in this passage as well. The first clause is indicative: 'My grandmother used to pick Labrador tea.' Most of the following clauses are in the subordinative mood, because they all relate elements of the same general event. (The gloss R indicates that the subject is the same throughout.) The conditional mood can be seen in 'And if/when people were going to arrive'. The same clause also illustrates the restricted/extended distinction among demonstratives. The travelers were covering a great distance by dogteam, so both their trajectory and their spatial configuration were sufficient for classification as extended. The use of word order can be seen here as well. Mrs. Charles first introduced her grandmother, a new topic, with the noun *maurluqa* to the left of the nuclear clause, followed by a pause. Reconfirming her identity at the end of the passage, she placed the noun *maurluma* to the right of the nuclear clause.

Maurlu-qa, . . .
grandmother-1SG/3SG
'My grandmother

ayu-nek *pi-t-la-llru-u-q,*
Labrador.tea-ABLATIVE.PL thing-obtain-customarily-PAST-INTR.INDICATIVE-3SG
used to pick Labrador tea leaves

waten *amller-i-vke-na-ki* *qillert-aq-lu-ki.*
this.way be.much-cause-not-SUBORDINATIVE-R/3PL tie-usually-SUBORDINATIVE-R/3PL
just a few like this, and tie them together

ene-mun *agar-t-aq-lu-ki,*
house-ALLATIVE hanging-cause-habitually-SUBORDINATIVE-R/3PL
and hang them inside the house.

aga-ur-te-llu-ki=llu *ene-mi*
hang-continue-cause-SUBORDINATIVE-R/3PL=too house-LOCATIVE
And she let them hang a long time inside.

Tuai=ll' *tamaku-t* *agiires-k-ata,*
so=too that.extended-PL approach.from.distance-CONDITIONAL-3PL
And when people were going to arrive

atauci-in *tegu-lu-ki,*
one-group take-SUBORDINATIVE-R/3PL
she would take one bundle of leaves

kumarr-lu-ki,
ignite-SUBORDINATIVE-R/3PL
and light them

amiig-em=llu *ciuqerra-nun* *nanger-te-vkar-lu-a,*
door-ERGATIVE=too front-ALLATIVE stand-cause-let-SUBORDINATIVE-R/1SG
and let me stand up right in front of the door

tarvar-lu-a. . . .
smudge-SUBORDINATIVE-R/1SG
and smudge me (wave the burning bundle around me).

elliin *piciryaraq-lu-ku,*
3SG.ERGATIVE do.traditionally-SUBORDINATIVE-R/3SG
This is what she customarily did,

maurlu-ma
grandmother-1SG/3SG.ERGATIVE
my grandmother.'

Esselen (= Ecclemachs = Excelen = Huelel)*

Esselen was originally spoken along the central California coast south of Point Sur, in the upper valleys of the Carmel and Big Sur rivers, and the valley of the Arroyo Seco, a tributary of the Salinas. When the Spanish arrived in 1770 the Esselen people were taken to three missions, San Carlos at Carmel, Soledad in the Salinas Valley, and San Antonio, to the south in Salinan country. At each mission they were mixed with other neophytes speaking unrelated languages. As early as 1833 Arroyo de la Cuesta reported that there were few Esselen left. No native speakers of the language survived into the twentieth century.

Esselen is not closely related to any other language. The Spanish missionaries commented that both the language and culture of the Esselen people differed from those of the neighboring Costanoan and Salinan (Shaul 1995b: 191). The language was classified as Hokan by Dixon & Kroeber in 1913, with supporting evidence added in Sapir 1917a. The possibility of a Hokan connection is further discussed in Langdon 1974, 1979, Gursky 1974, and Jacobsen 1979g. Due to the paucity of data its genetic affiliations remain difficult to establish with certainty.

Primary sources of data on the language are described in detail in Harrington 1916 (published in Turner & Shaul 1982), Beeler 1977, 1978a, and Shaul 1995b, 1998. In 1786 La Pérouse, a French explorer, recorded 22 words, published with his report (1797: 2.247-92). In 1792 Galiano, a ship's captain sent to explore by the Spanish government, recorded 107 Esselen words and phrases, of which 31 appeared in the report published in 1802. The vocabulary was reprinted by Von Humboldt (1811: 1.322). The full vocabulary and 7 sentences are in Beeler 1978. More recently it has been discovered that the original manuscript, still in Madrid, contains a catechism, now published in Shaul 1995b. In 1814 the priests at Carmel provided a translation of the sentence 'Men who shoot well the arrow are highly thought of and much loved' in response to a questionnaire sent out by the Spanish government.

In 1832 Father Felipe Arroyo de la Cuesta recorded 58 words and 14 phrases and sentences at Soledad, from speakers from the Arroyo Seco area 15 miles east of Carmel (Kroeber 1904). Comparison of this material with that from Carmel suggests that there may have been dialectal differentiation. The Soledad material was apparently the last to be recorded from native Esselen speakers.

Several other documents were provided by speakers of Rumsen, a Costanoan language, who were fluent in Esselen. In the late 1830s Eugène Duflot de Mofras, on the staff of the French Embassy in Mexico, was sent to explore. Material he collected appears in his report published in Paris in 1844. In 1878 another Frenchman, Alphonse Pinart, recorded an important corpus of around 140 items, published in Heizer 1952, from a woman named Omesia who had been married to an Esselen

man. In 1888 Henshaw was able to collect 110 words and 68 phrases from a Rumsen woman, Eulalia, whose mother was Esselen (Henshaw 1890, Kroeber 1902). In 1902 Kroeber recorded six words from another Costanoan woman (Kroeber 1904), and in 1906 Merriam obtained nine more (Beeler 1978). Finally, in the 1930s Harrington set about reeliciting the earlier material from his Rumsen consultant Isabelle Meadows. His Esselen notes have been published in Turner & Shaul 1982 and Shaul 1995a. Nearly all of the Esselen corpus, consisting of approximately 300 words with some short phrases and sentences, is organized and reproduced in Shaul, Turner, & Collins 1984. A grammatical sketch with text is in Shaul 1995b.

Analysis of the material has been problematic because of its meagerness and uneven quality. None of those who worked with native speakers was an accomplished phonetician. Precise meanings of words are not always clear, and there is little textual material. Discussions of phonology, morphology, and syntax can be found in Kroeber 1904: 49-68, in the Harrington material in Turner & Shaul 1981, in Beeler 1978, and in Shaul 1981c, 1982a, and 1982b. Material here comes chiefly from Shaul 1995b.

The consonant inventory may not be as elaborate as those of some other California languages, or distinctions such as glottalization may simply not have been recorded. There is a set of stops *p*, *t*, perhaps *ṭ*, *k*, and *ʔ*; a corresponding set of fricatives and/or affricates *c*, *kx*; *s*, *ṣ*, *x*, *h*; and resonants *m*, *n*, *w*, *l*, *y*, and perhaps *r*. The retroflex stop *ṭ* is typical of the area. Harrington and Kroeber included *f*, described by the early explorers as similar to the European sound, which is unusual in this area. Shaul analyses it as an allophone of *p*. There are five vowels, all appearing both long and short. Consonants are lengthened after short stressed vowels.

Reduplication in both nouns and verbs is abundant. Some is stem-initial: *ma-mamanej* 'fire' (Galiano); some is stem-final: *amutatas* 'stars' (Arroyo), *timama* 'dizzy' (Henshaw); and some is full: *koxlkoxl* 'fish' (Henshaw; perhaps plural or collective), *poolpool* 'boiling' (Merriam). In some cases it apparently serves functions typical of the process, indicating plurality or collectivity, intensity, and repetition. In others the function is unclear, perhaps due to the translations.

A number of nominal suffixes recur in the data, but their meanings are often difficult to isolate. Shaul found evidence of a system of noun class markers representing an animacy-based gender system. Possession is indicated by a pronominal prefix on the possessed noun followed by a prefix *-s-* of possession: *ni-š-pana* 'my-POSSESSIVE-son' = 'my son'; *ni-tsch-ekè* 'my-POSSESSIVE-husband' = 'my husband'; *nami-s-map* 'thy-POSSESSIVE-name' = 'your name'; *nemi-š-iha* 'thy-POSSESSIVE-bone' = 'your bone' (Henshaw, Galiano, Arroyo, Henshaw in Shaul 1995b). There are apparently no core case markers, but instrumental, comitative, and locative suffixes can be seen: *pexuisma ciefe-nu* 'hit.me stone-with' (Arroyo); *matsa-no* 'earth-on', *ot-no* 'heaven-in' (Carmel). There are

noun compounds: *tomanis-aci* 'night-sun' = 'moon' (Galiano). Nouns may also be derived with an agentive suffix *-pisi*: *alpa-pîši* 'speak-AGENTIVE' = 'storyteller, gossiper' (Kroeber and Henshaw in Shaul 1995b).

Pronouns are generally free in Esselen, in contrast with many other California languages where they are verbal affixes, and they are frequently omitted in sentences. They distinguish nominative, accusative, and possessive case. Subject pronouns can appear encliticized: *kets-pam neni=puk* 'where-to go=2SG' = 'Where are you going?'

Adjectives end in a suffix *-ki*: *salé-ki asátsa* 'good-ADJECTIVE day' (Henshaw). Adverbs were formed with *-wa*: *sale-gua* 'well'. Numbers show a quinary base.

On verbs, prefixes mark objects and hortative and imperative mood: *pexwi-sma* 'hit me' (Arroyo), *ha-čili-sma* 'OBJECT-IMPERATIVE-hit' = 'hit him!' (Arroyo). Shaul (1995b) identifies various derivational and tense/aspect/mood suffixes, including an imperfective or progressive, perfective or conditional, and future: *am-lala* 'will eat'.

The connected speech recorded shows predominantly OV order with variation, though the catechism uses VO order, perhaps reflecting the Spanish original. Noun phrases show the order DETERMINER-ADJECTIVE-NOUN: *annigua julef personas* 'those three persons'. Relative clauses follow their heads. Question markers, both the interrogative *ka* and interrogative pronouns, appear sentence-initially. Negation is accomplished with either a verbal prefix *an-* or a particle *maal(i)*: *an-siawake* 'Don't cry.' Clauses are conjoined and subordinated by a suffix or independent conjunction. Shaul (1995b) found a switch-reference system, with the suffixes *-m* 'then' and *-(a)l* 'while, as' used to conjoin predicates with the same subject, and other conjunctions conjoining clauses with different subjects, such as *lahim* 'but, however'.

The data show some terms shared with Rumsen, not surprising given its geographical proximity and the fact that many words were provided by Rumsen speakers.

The lines below are from the Galiano-Malaspina catechism, analyzed by Shaul (1995b: 228-37). The original spelling is retained.

Vamases	*chunai-mos*	*efege,*	*ca-chunai-g-mus*	*ques*	*las*	*masaneg*
when	die-PRF	person	Q-die-SUF-PRF	or	HON	soul

'When a person dies, do they die as a soul,

ca-la-sa	*ques*	*mepgel*	*ala-gua*	*teipas*	*chunai-mus*	*ù*
Q-HON	or	soul	3(?)-ADV	as(?)	die-PRF	

or do they die as a person?

Maali-lam	*chunai-mus*	*halass*	*masa neg*	*mepgel*	*sinnu*	*chunai-muha.*
NEG-3	die-PRF	in.capacity	soul	body	only	die-PRF

They don't die as a soul; only the body dies.'

Haida: *Southern (Skidegate, Ninstints*), Northern (Alaskan = Kaigani, Masset)*

Haida (from their word *x̲ayda* 'person') is a language isolate spoken on the Queen Charlotte Islands off the coast of British Columbia and north into Alaska. The southernmost dialect, once spoken on Anthony Island, was called Ninstints by Swanton after the main town (1911b: 209). Though only a few speakers remained at the beginning of the 20th century, the last survived until 1970 (Krauss 1973a). The dialect of Skidegate, representing an amalgamation of villages in the central Queen Charlottes that merged between 1870 and 1900, is now spoken by about 10 (Krauss 1997). The Masset dialect, spoken by people from villages of the northern Queen Charlottes that came together between 1876 and 1885, has perhaps 30 speakers (Krauss 1997). In the early 18th century, before contact, a group left the northern islands for Prince of Wales and Dall Islands in southeastern Alaska, establishing villages at Kaigani, Howkan, Sukwan, Klinkwan, Koiandlas, and Kasaan. Since about 1912 their descendants have lived at Hydaburg. Perhaps 15 still speak the language at Hydaburg and Ketchikan (Krauss 1997). All Haida speakers are probably over 60 years of age. The possibility was long pursued of a genetic link to Athabaskan, Eyak, and Tlingit in a hypothesized Na-Dene stock. It is now generally felt that similarities between Haida and Athabaskan-Eyak-Tlingit are due to contact and errors in analysis (Levine 1979, Leer 1990, 1991a). The proposal is discussed in detail in section 6.3.

Early Haida vocabularies appear in Radloff 1858, Tolmie 1884, Boas 1891, and La Grasserie 1902. Missionary grammars followed, in Harrison 1895 and Keen 1906, as well as Bible translations by both. Swanton's work at the turn of the century resulted in preliminary notes (1902), texts (1905, 1908), songs (1912), and a grammatical sketch (1911b). Haeberlin (1921) suggested a revision in Swanton's analysis of the verb stem. Also based on the Swanton material and on a few hours' work with a Skidegate speaker, is a description of phonetics and some morphology in Sapir 1923c. Benveniste worked extensively with speakers but published only comments in 1953. Studies of songs (Bursill-Hall 1964) and kinship (Anker 1974) contain material on the language. Bibliographies of Haida linguistic materials are in Kess 1968 and especially Krauss & McGary 1980. In publications in 1964, 1965, and 1968, Krauss compared available Haida data with Athabaskan, Eyak, and Tlingit.

Since the 1970s substantial work has been carried out on all three surviving dialects. Preliminary phonological analysis of Kaigani (Alaskan Haida) is in Welsch 1976 and Eastman & Aoki 1978. Work on Kaigani grammar includes discussion of pronouns in Kess 1974 and Welsch 1975a, postpositions in Edwards 1977, number marking in the verb phrase in Eastman 1976, tense and aspect in Eastman, Welsch, & Vaughn 1975, spatio-temporal particles in Eastman 1979a, question formation in Edwards & Eastman 1981, nominalization in Edwards & Eastman 1985, conjunction

in Eastman & Edwards 1982, subordination in Eastman & Edwards 1980, word order and information structure (topic, focus) in Welsch 1975b, Eastman 1979b, Eastman & Edwards 1979, 1983a,b, 1984, Edwards 1979, 1982, 1983, 1985. In 1977 Lawrence published a Kaigani dictionary with a substantial grammatical sketch by Leer (1977a). Texts are in Eastman & Edwards 1983c, 1991, Edwards 1995, and Edwards & Eastman 1995. There is a grammar of Skidegate Haida in Levine 1977a, pitch is discussed in Hori 1994, 1996, and texts are in Enrico 1995. Enrico has produced substantial work on both Masset and Skidegate, with a grammatical sketch (1989) and studies of phonology (1990a, 1991), classifiers (1987), case (1990b), tense in relative clauses (1983), deixis (1985), word order (1986), and songs (Enrico & Stuart 1995). Discourse structures are examined in Breinig 1995 and Hymes 1995.

The general structure of the language is illustrated here with Skidegate material from Levine 1977a. The consonant inventory includes plain/voiced stops *b, d, ǰ, ƛ, g, ǧ (=ɢ)*, voiceless aspirated stops *t, c, ƛ̓, k, q, ʔ*, ejectives *t̓, c̓, ƛ̓, k̓, q̓*, fricatives *s, ɬ, x, x̌ (=x̲), h*, and sonorants *m, n, ŋ*, and *w, y, l*. Vowels are *i, e, a, ʌ, u*. (In the Alaskan practical orthography, *ƛ* is spelled *dl*, *ǰ=j*, *ǧ=ɢ*, *ʔ='*, *ƛ̓=tl*, *c=ch/ts*, *q=k̲*, *ɬ=hl*, and *x̌* or *x̲=x̌*.) A distinction between high and low tone is easily perceived. Enrico notes that in Kaigani the system is one of pitch accent, so that at most one syllable in a word bears high tone (1991: 103). In Masset, tone contrasts only in heavy syllables, but it is otherwise predictable from syllable structure. Skidegate tone is essentially like that of Masset except that extra length (which has disappeared from Kaigani) has different effects in the two dialects.

Nouns and verbs are clearly distinct in structure. Nouns referring to indigenous items tend to be monomorphemic (apart from plant names): *k̓ad* 'deer', *qigu* 'spruce root basket'. Nominals for introduced items may contain a nominalizer, such as the instrumental *-ʔu*: *c̓isǧalaŋ-ʔu̲* 'cooking pot' (*c̓is-* 'hollow volume', *ǧalʌŋ* 'cook') = 'hollow volume used for cooking', or the locative *-dan*: *tay-da̲n* 'bed' (*tay* 'lie down'). Nouns may be compounded: *qagʌn skuǰi* 'Adam's apple' (*qagʌn* 'throat', *skuǰi* 'bone'). Nominals representing identifiable (definite) entities carry the suffix *-gay* for nonhumans or *-s* for humans: *x̌a* 'dog(s)', *x̌a-ga̲y* 'the dog(s)'. Number is usually unmarked for nonhumans, but for humans there is a plural *-lʌŋ* and a collective *-c̓id*: *ɬaxwu-l̲ʌŋ* 'friends'. Kinship terms contain a suffix *-ay* for address (*cin-a̲y* 'Grandfather!') or *-ǧa* for reference (*di cin-ǧa̲ st̓iga* 'my grandfather is sick'). Possession is shown by an independent pronoun, like *di* here for 'my'. If the possessor is the same as the subject, special possessive forms are used. The referential suffix for kinship terms is *-ʌŋ*: *ʔawi̲n ɬʌ qingʌn* 'I saw my mother.'

Predicates may consist of derivational prefixes, a root, derivational suffixes, and finally inflectional suffixes. Of special interest are the prefixes closest to the root, classifiers that reflect the shape, size, or animacy of an entity involved in an event.

(The same prefixes appear with numerals in counting.) Among them is *łga-* for objects that branch or fork from the end of a central axis, including chairs (for the legs), forks, beds, stoves, binoculars, scissors, adzes, and halibut hooks: *ǧudłgaǧaŋʔway ła łga-ǧwidaŋ* 'I dropped the chair'. Another is *q̓ay-* is for spheroidal or cylindrical forms, such as drums, hammers, clams, and stones. Enrico has identified several hundred. (Section 3.4.2 on classifiers contains a longer list.)

Preceding the classifiers in the verb are what are termed instrumental prefixes, including *da-* 'by pushing', *dʌŋ-* 'by pulling', *ƛu-* 'by boat', *gay-* 'by floating', *q̓u-* 'with the teeth', *ʔun-* 'with the back', *squd-* 'with the arms', *kid-* 'with a pointed object', *x̌a-* 'with the arms', *ƛʌ-* 'with the hand and fingers': *k̓ʌ ƛuʔis k̓ʌx̌agʌn* 'they came up on a boat'. To the left of these are causatives: *giŋ-* CAUSATIVE, *la łʌ ginƛuqaq̓ʌx̌agʌn* 'I made him come'.

Immediately following the root are derivational suffixes. The suffix *-ga* forms middle voice verbs (*ʔu k̓agaga* 'I'm an Eagle') and *-ǧa* indicates a change of state (*ʔu k̓aǧasʌʌga* 'it's drying'). A set of suffixes appear with verbs of motion to indicate direction: 'into or through', 'out', 'upward', 'downward', 'here and there', 'toward', 'in a vehicle' (*-c̓i* 'in', *qac̓i ła* 'Come in!'). Others distinguish the number of participants involved (*-ʔu* SINGULAR *ƛu gu ǧaw naʔuga* 'he lives on the boat'). There are markers meaning 'completely' (*ʔu k̓aǧasʌʌga* 'it's drying') and 'first' (*la k̓ʌ qaɬʌɬƛagʌndasi* 'they let him off first'). Following is a causative *-da* (*ǧuday ła c̓isǧwidaŋ* 'I dropped the box'), then translocatives (*lʌ x̌ʌwʔingʌn* 'he went out fishing'). Others indicate return, completion, iteration, imperative, and ability.

There are seven classes of inflectional suffixes: aspect, plural, negative, habitual, tense, tense/mode, and anaphora. Among the aspect suffixes are an imminent *-xidi* (*lʌ q̓aɬu-xid-dayagʌn* 'he was just getting up'), a durative *-di* (*ʔu k̓aǧasʌʌdyaŋ* 'it's drying'), *-gi* 'already' (*la łʌ qiŋgigʌn* 'I already saw him'), and *-sgi* 'almost' (*law qunʌŋgiɬsgiga* 'he almost went crazy'). The suffix *-ǧu* marks plurality of a third person (*di gi la wasq̓ʌwsdaǧugʌn* 'they yelled at me'). Negation is indicated by the particle *gʌm* plus the suffix *-ǧʌŋ* (*gʌm gu ła ʔisǧʌŋǧasga* 'I will not be there'). The habitual is *-gʌŋ/-ga* (*ʔannu lʌ ʔiǰiŋga* 'he comes here from time to time'). Tense markers include a future *-ǧas* (*gʌm gu ɬ ʔisǧʌŋǧasga* 'I will not be there') and various pasts, such as *-ga* (*lʌ gwalagʌn* 'he felt sorry (I heard)'). A final *-i* marks the involvement of an identifiable (definite) referent, time, or place: *ǧuday c̓isǧwigʌnn-i* 'the box fell', *ła tagʌnn-i* 'I ate it', *ła ʔasi qingʌnn-i* 'I saw this'.

Clauses may be nominalized with *-gay*: *x̌aw-gay di giŋǧax̌agilga* 'fishing tires me'. Dependent complement or adverbial clauses are marked with the suffix *-s* or *-gʌŋ* in place of the tense/mode inflectional suffixes:

łʌ	*ǧad-s*	*gyan*	*di*	*k̓in-a-gʌŋ-ga*	
1AGT	run-SUBORDINATE	when	1PAT	warm-MIDDLE-HABITUAL-TENSE	

'When I run, it makes me warm.'

Pronouns are independent particles which follow an agent/patient pattern: the first person agent is *łʌ* 'I', as above, while the first person patient is *di*, as above and in *di xwigʌn* 'I was cold', *di la squdagʌn* 'he hit me'. The language contains a large number of adverbial, syntactic, and discourse particles as well.

Some of these structures can be seen in the opening to a narrative by Becky Pearson recorded and analyzed by Levine (1977a: 223-47).

ƛʌgu	*k̓aw*	*gi*	*t̓alʌŋ*	*hʌlx̌a-gay*	/	*ǧʌn*	*ʔunsʔʌd-day*
way	herring.spawn	to	1PL.AGENT	gather-DEFINITE		for	know-DEFINITE

'Do you want to know

gi	*gwa*	*dʌn*	*sdałʌ*	
to	Q	2SG.PATIENT	want	

how we pick fish eggs?

ƛu	*gu*	*ǧaw*	*gi*	*t̓alʌŋ*	*hʌlx̌a-ŋ*	*lʌna-gay*	*x̌id-gu*	*ʔa.*
boat	there	in	to	1PL.AGENT	gather-DEF	village-DEFINITE	below-there	MODE

We go out to get it on boats in front of the village.

q̓ada	*gway-ay*	*q̓ułǧa*	*gi*	*t̓alʌŋ*	*hʌlx̌a-ŋ.*
out	island-DEFINITE	around	to	1PL.AGENT	gather-DEFINITE

We get it around those islands out there.

gaŋa-s-i	*gy-u*	*t̓alʌŋ*	*hʌlx̌a-ŋ.*
thick-DEPENDENT-DEFINITE	to-FOREGROUND	1PL.AGENT	gather-DEFINITE

We get the thick ones.

ʔiɬǧid-si	*t̓alʌŋ*	*taŋ-ǧa-da-s-i*
some-PRONOMINALIZER	1PL.AGENT	salt-INCHOATIVE-CAUSATIVE-DEPENDENT-DEFINITE

And then we salt some

gyan ʔasiŋ	*t̓alʌŋ*	*k̓a-ǧa-da*	*t̓alʌŋ*	*ga*	*qał-da-ga*	*siŋa*	*ǧʌŋ ʔa*	
and this	1PL.AGENT	dry-INCH-CAUS	1PL.AGT	some	freeze-INCH-CS	winter	for	MODE

and we dry some and we also freeze some for winter.'

IROQUOIAN FAMILY

SOUTHERN IROQUOIAN: **Cherokee**: *Eastern, Western*
NORTHERN IROQUOIAN
  TUSCARORA-NOTTOWAY
    Tuscarora
    Nottoway*
  PROTO-LAKE IROQUOIAN
    Huron-Wyandot*: *Huron, Wyandot*
    Laurentian*
      IROQUOIS PROPER = FIVE NATIONS IROQUOIS
        SENECA-CAYUGA
          Seneca
          Cayuga
        Onondaga
        Susquehannock = Andaste = Conestoga*
        ONEIDA-MOHAWK
          Oneida: *Southwold, Green Bay*
          Mohawk: *Kahnawake, Kanehsatake, Ahkwesahsne, Ohsweken, Thayendinaga, Wahta*

The Iroquoian family was centered at contact in the East, with Southern Iroquoian (Cherokee) in the Southeast and Northern Iroquoian in the Northeast. Degrees of mutual intelligibility were investigated in Hickerson et al. 1952 and lexical divergence in Lounsbury 1961. Internal relations are taken up in Mithun 1980, Chafe & Foster 1981, and Chafe 1984. Several other languages thought to be Iroquoian are mentioned in historical accounts, but lack of attestation makes them impossible to classify precisely. These include Meherrin in the Southeast, and Erie, Wenro, Neutral, and Petun in western New York and Ontario. An extensive bibilography of materials on the Iroquoian languages up to the late 19th century is in Pilling 1888. Overviews of the family are in Chafe 1973, 1976, Lounsbury 1961, and Mithun 1979a, 1991b, and 1993b. All of these works should be consulted for references to early sources. Possibilities of a deeper relationship between the Iroquoian family and the Caddoan family, and in turn of Iroquoian-Caddoan to the Siouan family, are discussed in Allen 1931, Chafe 1964a, 1973, 1976, and section 6.3 of this volume.

Cherokee, the sole representative of the Southern branch, was spoken in the 17th century in the southern Appalachian region of Tennessee, North Carolina, Virginia, South Carolina, Georgia, and Alabama. In 1794 some families moved to present Arkansas, where they became known as the Western Cherokee, then moved again in 1828 to present northeastern Oklahoma, where they were joined in 1838 by other

Western Cherokee who had come by way of Texas. Most of the Cherokee remaining in the East were forced west as well to Oklahoma on the Trail of Tears in 1838-9, but several hundred hid in the North Carolina mountains until 1849, when they could settle on land bought for them. The language is now spoken in western North Carolina by under 1000 (about two-thirds on the Qualla Boundary, one-third in the Snowbird community near Robbinsville), and in Oklahoma by around 10,000, including some children. Before removal, three dialects were recognized in North Carolina (D. King 1975). The Lower dialect, also called Underhill or Elati, was spoken along the Keowee and Tugaloo Rivers and the headwaters of the Savannah in present northwestern South Carolina and adjacent Georgia; it is no longer known. The Middle dialect, also called Central or Kituhwa, was spoken historically along the Oconaluftee, Tuckaseegee, Nantahala, and Little Tennessee Rivers in western North Carolina and is now spoken on the Qualla Boundary. The Western dialect, also known as Overhill or Otali, was spoken in all of the towns of East Tennessee and along the Hiwassee and Cheowa Rivers in North Carolina and in northeastern Alabama and northwestern Georgia during the late 18th and early 19th centuries (Mooney 1900: 16-7 cited in D. King 1975: 10). It is the primary ancestor of modern Oklahoma Cherokee. D. King (1975: 10) notes that the Snowbird dialect of North Carolina shows a mixture of Overhill and Middle features. As many as seven dialects have been distinguished in Oklahoma (Kilpatrick & Kilpatrick 1970: 84-5). Scancarelli (1987: 14) reports that speakers are aware of a distinction between a Western dialect, centered in Tahlequah, and an Eastern dialect, centered in Stilwell.

Two early grammars of Cherokee, one by Pickering from 1830, the other by von der Gabelentz from 1852, are reprinted in Krueger 1963 and 1993 and discussed in Pulte & Feeling 1977. Early 20th century descriptions are in Hinkle 1935, Bender & Harris 1946, Bender 1949, and Reyburn 1953-4. Texts are in Mooney 1891, 1900, Speck 1926, Olbrechts 1931, Mooney & Olbrechts 1932, Kilpatrick 1962, Kilpatrick & Kilpatrick 1964a,b, 1966, 1970, Spade & Walker 1966, L. King 1976a,b, 1977a,b, 1978. There is a grammatical sketch of Oklahoma Cherokee in Pulte & Feeling 1975, a teaching grammar in Holmes & Smith 1976, and a dictionary in Feeling 1975. Grammars of North Carolina Cherokee are in Walker 1975, D. King 1975, and Cook 1979. Descriptions of phonology are in Foley 1980, Lindsay 1985 (Chapter 4 on tone), and Haag 1997. The vocabulary of acculturation in King & King 1976, bird names in Pickens 1943, adjectives in Lindsay & Scancarelli 1985, experienced and non-experienced past in Pulte 1985, possession in Jordan 1997, grammatical relations in Scancarelli 1986, 1987, classificatory verbs in D. King 1978, verb inflection in Feeling 1994 and Van Tuyl 1994, and discourse in Singleton 1979. Language use is examined in Arrington 1971, Pulte 1979, Guyette 1975, 1981, and Berdan et al. 1982. Prehistoric folk zoology is reconstructed in Fradkin 1988. A collection of papers is in Munro

1996, with discussions of tone and accent by Wright (11-22), laryngeal metathesis by Flemming (23-44), laryngeal alternation by Munro (45-60), classificatory verbs by Blankenship (61-74), animacy and agreement by Dukes (75-96), possession by Williams (97-104), clause structure by Beghelli (105-14), and agentive nominalizations by Potter (115-32). Scancarelli 1997 presents stories of the supernatural. Cherokee is known for its indigenous syllabary, invented in the 1820s by a Cherokee speaker, Sequoyah (George Gist), who knew no English. There is considerable literature on this writing system and the extensive materials that were printed in it, which included a newspaper, *The Cherokee Phoenix*, published from 1828 to 1834 (White 1962: 511-2, Chafe & Kilpatrick 1963, Walker 1969, 1981, 1984, 1985, 1996, Pulte 1976, Monteith 1984, Scancarelli 1992, 1996, Walker & Saurbaugh 1993, Bender 1996). Booker 1991a contains an extensive bibliography of linguistic work on Cherokee.

Within the Northern Iroquoian branch of the family the first group to separate became the Nottoway and Tuscarora. Nottoway was spoken into the 19th century along the Nottoway River in southeastern Virginia. In 1820 John Wood recorded a wordlist from speaker Edie Turner in Southampton County, Virginia. Sometime before 1836 James Tresevant recorded a second list, headed by the Nottoway name for themselves, *Cherokhaka*. The lists were printed together in Gallatin 1836. Discussion of the genetic position of Nottoway within the family is in Mithun 1979a and Rudes 1981a.

The Tuscarora lived until the early 18th century in eastern North Carolina, but after the Tuscarora Wars of 1711-1713, around 1500 people moved northward to New York State, where they became the Sixth Nation in the League of the Iroquois. After the American Revolution, some who had sided with the British moved to the Six Nations reserve on the Grand River in Ontario. There remain at present very few fluent speakers. Early wordlists are in Lawson 1709, Crane 1819, Rockwood in Schoolcraft 1846: 5.552-8, Gallatin 1836, Catlin 1841: 2.262-5, 1845: 23, 27, 28, 1848, and Morgan 1851. A discussion of pronominal prefixes is in Olbrechts 1929. An early text is in Wallace & Reyburn 1951. Important work was done by J.N.B. Hewitt, himself of part Tuscarora descent, working for the BAE during the late 19th and early 20th centuries. His vocabulary files were compiled, along with some material from other sources, into a dictionary by Rudes (1987). A magnificent collection of texts he recorded has been edited and analyzed in a volume by Rudes & Crouse (1987). Additional texts are in Mithun & Greene 1980a,b. A grammar is in (Mithun) Williams 1976a. A larger dictionary is due to appear in Rudes 1998 and a more comprehensive grammar in Mithun forthcoming a. There is further vocabulary in Greene 1969 and descriptions of phonology in Fickett 1967 and Rudes 1976, demonstratives in Mithun 1987a, word order and prosody in Mithun 1995b, and subordination in (Mithun) Williams 1973.

The Meherrin, another southeastern group, are thought to have spoken an Iroquoian language, but there is insufficient documentation to classify it precisely. They were first encountered by Edward Bland in 1650 living in two towns on the Meherrin River in Virginia and North Carolina. The town names, *Unote* and *Cowochahawkon*, look Iroquoian in origin, the first perhaps the noun for 'town', the second containing a neuter pronominal prefix *Co-* (*ka-*) and locative suffix *-awkon* (*-á:kǫ*), linked by Rudes (1981b) to a 19th century Tuscarora town name.

Perhaps the first North American language to be recorded by Europeans was what has been called Laurentian. When Jacques Cartier sailed into the Bay of Gaspé in 1534 he encountered a large fishing party from settlements up the St. Lawrence River, especially Stadacona, around the present site of Quebec City. He took two men back with him to France, Domagaya and Taignoagny, sons of the chief. The account of this voyage contains 58 words of their language (Biggar 1924). Cartier returned the next year with the captives, who now spoke some French, and sailed upriver as far as Hochelaga, site of present Montreal. When he returned to France in 1536 he took his original captives and eight others. The account of this second voyage contains 170 words (Biggar 1924). By the time Champlalin visited the area in 1603, the Laurentians had vanished. The vocabularies, variously termed Stadaconan, Hochelagan, or Kwedech, were also published in Robinson 1948, Hoffman 1961, and Barbeau 1961. Examination of them indicates that they are Iroquoian but represent more than one language or dialect (Lounsbury 1979, Mithun 1982a), because they show conflicting phonological developments. Some words resemble known Northern Iroquoian languages, but others are entirely different.

The Huron language was spoken in the 17th century in present Ontario at the south end of Georgian Bay, off Lake Huron. Historical accounts describe the Huron confederacy as consisting of five tribes: the Attignawantan, Attigneenongnahac, Arendaronon, Tahontaenrat, and Ataronchronon. After a series of epidemics and attacks from the Iroquois between 1647 and 1649, the Huron were decimated. Some survivors fled east to Lorette near Quebec City, some settled among the Five Nations Iroquois, and some joined the Tionontati (Petun) until they too were defeated by the Iroquois. Remnants of the Huron, Tionontati, and defeated Erie and Neutral, known collectively as the Wyandot, fled westward toward Sandwich, Ontario. Many then moved south, ultimately settling in Oklahoma. Huron was probably last spoken at Lorette early in the 20th century. Good records of Huron were left by French missionaries, much of it assembled by Pierre Potier working during the mid-18th century at Sandwich (1920a,b,c). Gabriel Sagard-Theodat lived in Huronia during the year 1623-4 and compiled a substantial lexicon with phrases (1632). Jean de Bréboeuf, who worked intermittently among the Huron from 1626 to 1649, left a catechism (1630), a grammar which has been lost, and grammatical notes (1636,

Thwaites 1896-1901: 10.117-23). Pierre Joseph Marie Chaumonot, who went with the group to Lorette, wrote a grammar (Wilkie 1831, Fraser 1920: 725-77). Lagarde compiled a grammatical sketch on the basis of the earlier Chaumonot material (1980a) and a discussion of tense (1980b). Beginning in 1982, Steckley published a number of short papers on aspects of Huron culture reconstructed from language in *Archaeological Notes*, the newsletter of the Ontario Archaeological Society. Huron dialectology and its relationship to other Iroquois languages is discussed in Mithun 1985a. Wyandot was last known to be spoken in 1961 in Oklahoma. Rich documentation was left by Marius Barbeau, who published 40 analyzed texts collected in 1911-12 in Ontario and Oklahoma (1960) and a discussion of pronominal prefixes (1915). Extensive fieldnotes and dictionary materials remain in manuscript form in the National Museum of Canada.

The Iroquoian neighbors of the 17th-century Huron, many of whom joined them to constitute the Wyandot, are known primarily through missionary accounts (Thwaites 1896-1901) but their languages are almost undocumented. The Tionontati or Khionontateronon (for *tyonǫtatihró:nǫ?* 'people beyond the hill'), also called the Petun, or Tobacco Nation, lived about 26 miles southwest of the Huron in at least 9 villages. Residents of another 28 villages between the Grand and Niagara Rivers north of Lake Erie in Ontario were referred to collectively by the French as the Neutral, because they sided with neither the Huron nor the Five Nations Iroquois. The Huron called these people *Atiwandaronk* 'they understand the language', suggesting that their speech was similar to Huron but not identical. Immediately to the east were the Wenro, reported by the missionary Le Jeune to have spoken Neutral (Thwaites 1896-1901: 16.253). They were part of the Neutral Confederacy until 1637. Southeast of Lake Erie were the Erie, or the Nation du Chat (Wright 1974). They may be the people also known as the Kahkwas. Two of their town names are known from the *Jesuit Relations*, Rique and Gentaienton.

The Iroquois proper, the Seneca, Cayuga, Onondaga, Oneida, and Mohawk, constitute the League of the Iroquois or Five Nations, whose territories stretched across most of present New York State until the American Revolution. Many Iroquois were drawn into war on the side of the British and migrated at the end of the 18th century to the Six Nations reserve on the Grand River in Ontario. Early vocabularies in these languages are listed in Pilling 1888, Chafe 1973, 1976, and Mithun 1979a.

The westernmost of the Iroquois languages is Seneca, now spoken by about 100 people in three communities in western New York State: Cattaraugus, Allegany, and Tonawanda (Wallace Chafe p.c. 1999). Asher Wright, a missionary at Buffalo Creek (Cattaraugus), published primers (1836, 1842), a periodical, *The Mental Elevator* (1841-50), and translations of the gospel (1874). J.N.B. Hewitt of the BAE published extensive texts with interlinear and free translations (1903, 1918). Early works on

grammatical structure are in Preston & Voegelin 1949 and Holmer 1952, 1953b, 1954. Major work on the language by Wallace Chafe includes grammatical notes (1959a), grammatical sketches (1960-1, 1996), a handbook with grammatical notes and vocabulary (1963), and dictionaries (1967, 1983a). There are special treatments of internal reconstruction (1959b), consequential verbs (1980), oral and literary styles (1981, 1993a, 1994 ch 12), puns (1998), and information flow (1985). Additional work on phonetics is in Dean-John 1983 and Dean-John et al. 1985; and on phonology and morphology in Dudley 1974, Sustakoski 1974, and Oehrle et al. 1985. Linguistic evidence for dating religious practices is in Chafe 1964, and acculturation is described in McElwain 1979a. A major work is the *Seneca Thanksgiving Rituals* (Chafe 1961). Additional texts are in McElwain 1979b, Chafe & Curry 1980, Chafe & Jones 1980, Chafe & Snow 1980, Fenton & Redeye 1980, and Mithun & Peterson 1980.

The Cayuga lived, historically, east of the Seneca between Cayuga and Owasco Lakes. After their villages were destroyed during the Revolution, many went to Six Nations, Ontario, where their descendants now live, 99 of whom are fluent speakers. Others joined the Seneca at Buffalo Creek, where the language was gradually replaced by Seneca. Still others moved with other Iroquois to the Lower Sandusky River in Ohio, then in 1831 on to northeastern Oklahoma near Miami. Oklahoma Cayuga, called Seneca-Cayuga, was spoken into the 1980s. Ontario and Oklahoma Cayuga are compared in Mithun 1989b. There is a pedagogical grammar of Ontario Cayuga in Mithun & Henry 1982 and important ceremonial texts in Foster 1974. Additional texts are in Foster & Sky 1980, Foster & Thomas 1980, and Mithun & Henry 1980. A dictionary is in Kick et al. 1988. The prehistory of the language is discussed in Chafe & Foster 1981; stress and laryngeal spreading in Foster 1982, Benger 1984, 1988, and Doherty 1993; phonology in Dyck 1990, 1992; number in Mithun 1988; incorporation in Mithun 1986a; lexical categories in Mithun 1999a, grammatical relations in Mithun 1989a, 1991c; and word order in Mithun 1987b.

The Onondaga live in their traditional home in central New York State and at Six Nations, Ontario. There are currently about a dozen fluent speakers just south of Syracuse. The Sweetgrass First Nations Council counted another 43 speakers at Six Nations in 1994. An extensive dictionary compiled in the late 17th century by an unidentified Jesuit missionary was published in Shea 1860. The Moravian missionary David Zeisberger completed another dictionary by 1760 (Horsford 1887) and a grammatical sketch by 1780 (Zeisberger 1888). *The Iroquois book of rites*, first published by Hale in 1883b, contains an Onondaga text, and extensive texts with interlinear translation appear in Hewitt 1903 (141-220) and 1928 (612-791). More recent texts are in Woodbury & Webster 1980a,b,c,d and especially Woodbury 1992, a monumental text on the Iroquois League. A grammatical sketch is in Chafe 1970, and extensive discussions of noun incorporation are in Woodbury 1974, 1975a,b. A

detailed grammar and comprehensive dictionary will appear in Woodbury forthcoming a,b. Plant names are in Beauchamp 1907 and placenames in Gordon 1984. The loss of **r* is discussed in Woodbury 1981 and K. Michelson 1986.

Oneida was spoken in the 18th century in New York State in an area to the east of the Onondaga, south of Oneida Lake. During the first half of the 19th century two new communities were formed, one near Green Bay, Wisconsin, the other near London, Ontario. All but 32 acres of land in New York were sold. There are now perhaps a dozen fluent Oneida speakers at Green Bay and about 200 in Ontario (Mercy Doxtater p.c. 1997). A partial grammatical sketch was published by Boas in 1909. A substantial sketch, which was to become the model for grammatical descriptions of all other Iroquoian languages, is in Lounsbury 1953. Teaching dictionaries are in Antone et al. 1981 and Antone 1982, and another substantial dictionary is in Abbott, Christjohn, & Hinton 1996. Texts are in Campisi & Chrisjohn 1980, Abbott, Cornelius, & Johns 1980, K. Michelson 1981a, and Hinton 1996. There are descriptions of phonology in Lounsbury 1946 and Pepper 1986, of the cislocative and translocative directionals in Abbott 1981, of gender in Abbott 1984, and of paradigms in Goddard 1990. Lexicography is discussed in K. Michelson 1990 and possession in K. Michelson 1991. A detailed grammar is in K. Michelson forthcoming and a comprehensive dictionary in K. Michelson and Doxtater forthcoming.

The Mohawk were living in the seventeenth century in the Mohawk River Valley in eastern New York between present Schenectady and Utica. Around 1670 many moved northward to the St. Lawrence, eventually settling at present Kahnawake (Caughnawaga), Quebec, across from Montreal, and at Kanehsatake (Oka) west of Montreal. Around 1750, some left Kahnawake for Ahkwesahsne (St. Regis) further upriver. Most of those who had remained behind in New York moved soon after the Revolution to Ohsweken (Six Nations) and Tyendinaga in Ontario. In 1881 a group from Kanehsatake settled at Wahta (Gibson) in Ontario. There are thus six modern Mohawk communities: Kahnawake and Kanehsatake in Quebec, Ahkwesahsne which extends over portions of Quebec, New York State, and Ontario, and Ohsweken, Tyendinaga, and Wahta in Ontario. Fluent speakers are estimated at 600 at Kahnawake, 100 at Kanehsatake, 3000 at Ahkwesahsne, 2 at Tyendinaga, 87 at Ohsweken (Sweetgrass First Nations Language Council, 1994), and under 50 at Wahta (Sweetgrass). The dialects are discussed in Bonvillain 1984. An early Mohawk dictionary was compiled by Bruyas in the late 17th century (Shea 1862). Extensive liturgical materials produced by missionaries remain unpublished, but Cuoq, missionary at Kanehsatà:ke, published a grammatical sketch (1866) and dictionary (1882). Hale 1883b contains a Mohawk text probably from the 18th century and Hewitt 1903 a Mohawk version of the cosmology text with interlinear and free translation. Grammatical descriptions are in Bonvillain 1973, Beatty 1974, Mithun

Chafe 1978, Postal 1979, Hopkins 1988, Mithun 1992b, 1996c, and forthcoming b, and Baker 1996. Teaching grammars are in Deering & Delisle 1976 and Maracle 1995. Dictionaries are in Bonvillain & Francis 1971, G. Michelson 1973, and Mithun 1977. Mohawk texts are in G. Michelson 1976, (Mithun) Williams 1976b, Bonvillain & Francis 1980, K. Michelson, Natawe, Norton, & Norton 1980, and Kanien'kehaka Raotitiohkwa 1991. There are discussions of phonology in Postal 1964, 1968, 1969, Mithun 1979b, K. Michelson 1981b, Hopkins 1987, and K. Michelson 1989; locatives in Bonvillain 1981; color terms in Frisch 1972; names in Mithun 1984b; quantifiers in Baker 1995; lexical categories in Mithun 1999a; lexicalization in Mithun 1979c; polysynthesis in Mithun 1997d, 1998a, Baker 1996; noun incorporation in Bonvillain 1974, 1989a,b, and Mithun 1984a, 1986b, and Baker 1988a,b; reflexives in Bonvillain 1994; aspect in Baker 1992; pronouns in Mithun 1986c, Wright 1991; case and grammatical relations in Mithun 1991d and Baker 1990, 1991, 1996; possession in Mithun 1996d; the particle *ne?* in Bonvillain 1985; subordination in Mithun 1984c; complementation in Ikeda 1991; questions and answers in Horne 1975, Feurer 1976, 1980a; and discourse structure in Bonvillain 1988. Reconstruction of culture from lexicon is discussed in G. Michelson 1974, 1988, and linguistic acculturation in Huot 1948 and Bonvillain 1978. Literacy is discussed in Mithun 1985b, 1992c, and children's acquisition of Mohawk as a mother tongue in Feurer 1980b,c and Mithun 1989c.

A last language, Susquehannock, was probably a sister to the Iroquois languages though its speakers were not part of the political League. The Susquehannock, known to the Huron as Andastoerrhonons or Andastes, to the Delaware as Minquas, and to colonists as Conestogas, were encountered by John Smith in 1608 several days' journey from the head of Chesapeake Bay. Epidemics and war with the Iroquois, Delaware, and colonists took a heavy toll; their number was estimated in 1697 at 40 warriors plus women and children at Conestoga, near Lancaster, Pennsylvania. A lynch gang known as the Paxton Boys murdered all survivors in 1763. Their language is known through a Lutheran catechism translated into Delaware by the Swedish missionary Johan Campanius. Appended to the volume is a 'Vocabula Mahakuassica' containing about 80 words of Susquehannock (Campanius 1696). The list was republished with additions by the grandson of Campanius, Thomas Campanius Holm (1834 [1702]). The 89 words are sufficient to establish the language as a member of the Iroquois proper group (Mithun 1981).

A number of works treat aspects of the Iroquoian family as a whole or of branches of it. Sound shifts and some cognates are provided in Lounsbury 1978 and Mithun 1979a, and reconstruction of Proto-Iroquoian culture from lexical materials is in Mithun 1984d and 1985c. Prosody is surveyed in Chafe 1977a and K. Michelson 1988 and sound symbolism in Mithun 1982b. Discussions of the evolution of pronominal systems are in Chafe 1977b and Mithun 1993c, 1996b, of conjunction in Mithun

1992d, of subordination in Mithun 1980b, of negative constructions in Mithun 1995c, and of evidentials in Mithun 1986d. Foster (1985, 1986) traces terminology used in the areas of tense, mood, and aspect within Northern Iroquoian.

General structures of the Iroquoian languages can be illustrated with material from Cayuga. Examples cited here come from the speech of Reginald Henry, Marge Henry, and Jim Skye. The phonological inventory is small: consonants *t, k, ts, s, n, r, w, y, h, ʔ;* and vowels *i, e, a, o, ę, ǫ* (with variant *u* for *o* in some contexts). Utterance-final short vowels are automatically followed by *h*.

Proto-Northern-Iroquoian stress was essentially penultimate. An important iambic pattern has arisen in Cayuga, whereby even-numbered syllables have been strengthened and odd-numbered syllables weakened (Foster 1982). Penultimate syllables that are even-numbered (counting from the beginning of the word) retain their original primary stress: *hoʔkí:tę́ʔ* 'it fit me'; *haʔtewę́hnihsrakéhkha:ʔ* 'everyday-ish'. If the stressed syllable is open, it is lengthened. (Laryngeals are usually ambisyllabic, so close a syllable: *oktéhaʔ* 'root'.) Penultimate syllables that are odd-numbered are stressed only if open: *í:yę́:* 'she wants' but *ihse:* 'you want', *ahi:ʔ* 'I thought'. If the odd-numbered penult is preceded by an open syllable, this even-numbered pretonic antepenult is lengthened: *satshę́:nǫ́:ni:* 'you are glad'. If the penultimate syllable is odd-numbered and closed or contains the vowel *a*, then the stress appears on the antepenult: *tekyáhtį́hę́h* 'they are different', *haʔteyǫhsóhkwake:* 'all sorts of colors'. (This special behavior of the vowel *a* can be traced back to a Proto-Northern-Iroquoian pattern whereby an epenthetic vowel *a* was introduced to break consonant clusters resulting from noun incorporation: *-sahe?t-* 'bean' + *-yę́tho* 'plant' = *-sahe?t-a-yę́tho* 'bean-plant': *ę́kesǫhe?tayę́́:thoʔ* 'I will plant beans'. The epenthetic *a* never bore stress.) Stress spreads to the first of two adjacent vowels: *káistaʔ* 'tin'. Finally, these stress patterns appear only on intonation-final words; when words are medial within an intonation unit, they receive final stress: *Ahsę́ niyohfraké: tshikhna:krę́ʔ nę́́:thoh.* 'I have lived here for three years' (three years so.I.live here).

A special feature of Cayuga is laryngeal spreading: odd-numbered syllables closed by a laryngeal show regressive spreading of the laryngeal feature, voicelessness in the case of *h*, creakiness in the case of *ʔ*. Thus *tę́twaʔę́náę́ʔ* 'we all will play snowsnake' shows no spreading, but *tę́hę́nʔáę́naę́ʔ* 'they (masculine) will play snowsnake' shows spreading on the first (voiceless) syllable and the third (creaky) syllable, with glottalization of *n*. The spreading does not occur in syllables with laryngeal onsets: in *heʔsniǫtíʔtre:* 'you two, drag the log away' there is no initial creakiness.

There are three morphological types of words in Cayuga, as in the related languages. Particles have no internal structure: *kiʔ* 'just', *kwahs* 'really', *kwe:* 'well'.

Nouns have relatively simple structure, consisting of a stem, usually preceded by a prefix and followed by a suffix. The prefix either indicates the gender of the

referent (neuter, masculine, feminine) and number (for humans), or it specifies the possessor. The suffix, most often *-aʔ*, simply identifies the word as a noun. The noun *o-yę́ʔkw-aʔ* 'tobacco' is based on the root *-yę́ʔkw-* 'tobacco', preceded by the neuter prefix *o-* and followed by the noun suffix *-aʔ*. The noun *h-ǫkweh* 'man' begins with the masculine prefix *h-* and has no suffix. Alienable and inalienable possession are distinguished by two sets of prefixes: *ak-étkwʔę́t-aʔ* 'my wallet' (alienable), *k-ǫhǫ́htʔakeh* '(on) my ear' (inalienable). Nouns may be followed by suffixes or clitics, such as the locative *-keh* 'in/on/at', as in *kʔaskwa:ʔ-keh* 'on the stone'; a typicalizer *=ǫweh* 'genuine' as in *ǫkweh=ǫ́:weh* 'person=real' = 'Indian'; or a characterizer *=neha:ʔ* as in *ǫkwehǫwéh=neha:ʔ* 'Indian way, Indian language'. There is an augmentative *=kówah* as in *kį́hę́ʔ=kó:wah* 'river' (*kį́hę́́:teʔ* 'creek'); a diminutive *=ʔah* as in *eksá:=ʔah* 'child' or *haya:no:wé:=ʔah* 'he runs sort of fast' or even *e-ksaʔ=ko:wá:h=ah* 'she-child=AUG=DIM' = 'she is sort of beautiful'; and a distributive *=shǫ́ʔǫh*, as in *kanyoʔ=shǫ́:ʔǫh* 'game' (*kanyo:ʔ* 'wild animal', literally 'it is killed').

The internal structure of verbs is considerably more complex. All verbs are based on a verb root and must contain a pronominal prefix referring to the core arguments. Indicative verbs must contain an aspect suffix as well. The pronominal prefixes have a semantic basis, distinguishing agents and patients: *k-ahyá:kwahs* 'I (AGENT) am picking fruit', *ak-itrę́htá:s* 'I (PATIENT) am sleepy'. (The agent prefixes resemble the inalienable possessives on nouns, and the patient prefixes the alienable possessives.) In transitive verbs, the pronominal prefix complex refers to two parties: *kǫ-yénawaʔs* 'let me help you'. First, second, and third persons are distinguished, inclusive and exclusive in first person, and neuter, feminine, and masculine gender in third. Singular, dual, and plural number are distinguished. Not all distinctions appear in all combinations but there are over 50 distinct pronominal prefixes in all.

Commands are unmarked for aspect: *sǫhyá:koh* 'pick berries!' (*s-* 'you', *-ahy-* 'berry', *-a-* epenthetic, *-ko* 'pick'). All other verbs carry aspect suffixes. Imperfectives indicate habitual and, for some verbs, ongoing action: *kǫhyá:kw-ahs* 'I am picking berries, I am a berrypicker'. Perfectives indicate an event conceived of as a self-contained whole and always appear with a factual, future, or optative prefix: *akáhyako-ʔ* 'I picked berries', *ę́káhyako-ʔ* 'I will pick berries', *a:kǫhyá:ko-ʔ* 'I should pick berries'. Statives mark states (*kowá:n-ę́h* 'it is big') or, for events, perfects, that is, resultant states: *akáhyakw-ę́h* 'I have picked berries'.

Several suffixes may follow the aspect markers. A past tense suffix may be added to imperfectives to yield past habituals: *kǫhyakwǫhs-kę́hę́:ʔ* 'I used to pick berries'. Another past tense suffix may be added to statives to distance the state in time. It can yield past perfects: *akahyakwę́-hne:ʔ* 'I had picked berries'. A continuative may be added to imperfectives or statives to mark an ongoing action or state. The continuative verb may then be inflected as a future or optative: *ę́kahyakwáhs-e:k* 'I

will be picking berries', *a:kǫhyákwǫhs-e:k* 'I should be picking berries'.

Additional prefixes and suffixes can and often do appear with verbs. A middle voice or reflexive prefix *-at(at)-* may immediately precede the verb root: *k-at-kę́kęhs* 'I get (myself) up'; *atk-atat-ahtsí:yo:ʔ* 'I scratched myself' (*atkahtsí:yo:ʔ* 'I scratched (it)'). Before the pronominal prefix may be a repetitive *sa-*: *sa-kó:yǫ:* 'she has returned (again)'. There may be a cislocative *ta-* indicating approaching motion: *ta-sha:* 'bring it over here'. There may be a future prefix *ę-* or optative prefix *a:-* for predicted or possible events respectively: *ę-kehs* 'I will use it', *á:-kehs* 'I might use it'. The dualic prefix *te-* serves a variety of roles but often indicates two of something or a change of state or position: *te-wakę́:sǫ:* 'I am shod, have (two) shoes on'. The factual prefix *a-* marks events known to be true, especially those that happened in the past or are happening at the moment of speech: *a-kehs* 'I used it', 'I am using it'. The translocative prefix *h-* indicates motion away: *haʔ-sha:* 'take it over there!' The coincident prefix *tsh-* indicates equality or coincidence: *tshaʔ-té:yoht* 'the two are the same style'. Negation is indicated by the negative particle *thęʔ* 'no, not', and a prefix, either the negative *teʔ-* or the contrastive *th-*: *thęʔ tʔe-a:kyęʔ* 'I do not have it', *thęʔ th-á:kakye:* 'I won't do it'. The partitive *n-* relates ideas and is often translatable as 'so' or 'how': *ni-ka:nǫ:ʔ* 'how expensive it is'. Multiple prefixes often appear within a single verb: *thęʔ thaǫsakáhyakoʔ* 'I won't pick berries there again' (*t-h-aǫ-sa-k-ahy-ko-ʔ* 'CONTRASTIVE-TRANSLOCATIVE-OPTATIVE-REPETITIVE-1.AGENT-berry-pick-PERFECTIVE').

Various derivational suffixes may follow the verb root. An inchoative adds the meaning 'become': *ǫkútęthe?* 'I am poor', *ǫkitęthé-ʔnh-eʔ* 'I got poor'. Reversives undo an action: *akwáyętho?* 'we planted', *akwayęthw-á:ko-ʔ* 'we harvested (unplanted)'. There are several causatives, such as *-ht* in *atkhri-ht* 'I broke it' (*atkáhiʔ* 'it broke'). Instrumentals add the meaning 'use for' or 'with', and often derive names of tools: *ǫteʔnyętę́hęʔ* 'one measures', *ǫteʔnyętę́hsta-hkhw-aʔ* 'ruler'. A benefactive adds a beneficiary, supplying the meaning 'for': *akríhoʔteʔ* 'I am working', *khe:ihoʔt-ę́hs-eʔ* 'I am working for her'. Distributives spread events or states over various places or participants: *akrihoʔté:-nyǫʔ* 'I am working all over'; *ękatęfrǫ́:niʔ* 'I will prepare (it)', *ękatęfrǫ́ny-ǫhnǫ:ʔ* 'I will prepare things'. A progressive indicates motion along: *akrihoʔt-á:kyeʔ* 'I am working along'. There is an intensive: *sǫhtsóhaeh* 'wash your hands!', *sǫhtsohái-ʔtsih* 'wash your hands well!'. The facilitative indicates frequently recurring action or likelihood: *ǫkáhtǫ:ʔ* 'I lost it', *akahtǫní-hsk-ǫ:* 'I am a habitual loser, prone to lose', *akanʔaná:węʔ* 'it melted', *onaʔnawę́ʔ-sk-ǫ:* 'it melts easily'. A completive indicates the finishing of an action: *í:sehs* 'use it!', *sǫhst-áhsih* 'finish using it'. The dislocative (*-hn-*, *-h-*, and other forms) indicates displacement: *ękatrihóʔta:t* 'I'll work', *ęskatrihóʔtat-h-aʔ* 'I will go back to work'. It is often paired with the purposive *-eʔ*, indicating intention: *akatǫwę́-hn-eʔ* 'I'm going swimming'.

Cayuga exhibits extensive noun incorporation. A noun stem may be incorporated into a verb immediately before the verb root to yield a new verb stem. The noun stem generally qualifies the verb by indicating the kind of semantic patient involved, as in *sǫhyá:koh* 'pick berries!' (noun root *-ahy-* 'berry' and verb root *-ko-* 'pick'), or as in *ohǫnʔatákʔaǫh* 'the potatoes are delicious' (*-hǫnaʔt-* 'potato' and verb root *-kaʔ* 'be delicious'). Incorporation is used for several purposes. It provides a way to create labels for recurring activities: *ękyę́tǫthoʔ* 'I will stoke the stove' (*-yęt-* 'wood', *-ǫtho-* 'put in oven'), *ękyę́ʔkǫthoʔ* 'I will burn tobacco' (*-yęʔkw-* 'tobacco'). It allows speakers to cast affected human beings as core arguments: *khaʔtá:thęhs* 'I am thirsty' ('I am throat-dry' rather than 'my throat is dry'). Incorporation is also used pervasively to background established information. The first time an entity is introduced, an independent noun is often used. Once the object has become part of the scene, however, it may be carried along as part of the verb, like the eggs below.

Oʔnhǫhsáʔ	*hniʔ*	*tho*	*í:wa:t*
o-ʔnhǫhs-aʔ	*hniʔ*	*tho*	*i-w-a:t*
NEUTER-egg-NOUN.SUFFIX	too	there	EPENTHETIC-NEUTER.AGT-be.in.STATIVE

'There are some eggs in there too.

Thę́ʔ	*tʔikę́*	*hne:ʔ*	*a:sʔenhǫhsanihá?*	*hniʔʔ*
thęʔ	*teʔ-ikę*	*hne:ʔ*	*a:-se-ʔnhǫhs-niha-ʔ*	*hniʔ*
not	NEGATIVE-is.it	CONTRASTIVE	OPTATIVE-2AGENT-egg-borrow-PRF	too

Don't you think you should egg-borrow too?'

Constituent order is fully fluid, reflecting primarily the relative importance of the information conveyed. After orienting material, usually particles, words are arranged such that the most newsworthy information appears early, followed by successively more predictable and peripheral information. Such ordering can be seen in the following passage from a conversation between Reg and Marge Henry.

RH	*Shǫká:ʔa*	*tʔi*	*kęh*
	shǫkáʔa	*tiʔ*	*kę*
	someone	then	Q

'Has somebody

kaesanhaʔǫ	*ęhseʔnikhǫ́nyǫ:ʔ*
kaesa-nhaʔ-ǫ	*ę-hs-ʔnikhǫ-nyǫ:-ʔ*
3PL.AGENT/2PATIENT-hire-STATIVE	FUTURE-2AGENT-sew-DISTRIBUTIVE-PERFECTIVE

hired you to sew?'

MH *Né:ʔ* *kʔi* *kyɛ́:ʔ* *thó:* *ne:ʔ* *a:*,
it.is just in.fact there it.is HESITATION
'As a matter of fact ah,

akya?tawi?thrá? *ɛ:.*
at-ya?t-awi-?thr-a? *ɛ*
MIDDLE-body-be.in.tube-NOMINALIZER-NOUN.SUFFIX HESITATION

tekhní: *skɑhe?* *tka:kɑ́:t* *ɛkehsrɑ́:ni?.*
tekhni: *s-ka-he?* *t-ka-kɑ:t* *ɛ-k-hsr-ɑni-?*
two one-NEUT.AGT-be.on.ST CIS-NEUT.AGT-necessary.ST FUT-1AGT-thing-make-PRF
I have to make twelve shirts.

Oya:nré?s *kyɛ́:?ɑ* *tka:kɑ́:t* *ɛkehsrɑ́:ni?*
o-yanr-e?-s *kyɛ:?=?ɑ* *t-ka-kɑ:t* *ɛ-k-hsr-ɑni-?*
NEUT.PAT-good-ST-DIST in.fact=INF CIS-NEUT.AGT-necessary.ST FUT-1AGT-thing-make-PRF
I guess they have to be good ones

ne? *i:yɛ́:* *ɛyɑtkɛhɑ́:* *kyɛ:?* *nɑ́ne:?.*
ne? *ya-e:* *ɛ-ye-at-kɛ-hɑ:* *kyɛ:?* *nɑ́ne:?*
because FEM.AGT-want.STATIVE FUT-FEM.AGT-MIDDLE-sell-DIST-PRF in.fact youknow
because she wants to sell them, you know.'

RH *To: tʔi* *ni:yɑ́:* *sɑhfrɑ:ní:* *onɑh?*
to: ti? *ni-yo-ɑ-:* *sa-hsr-ɑni-:* *onɛ*
how then PARTITIVE-NEUT.PAT-be.amount-ST 2PAT-thing-make-STATIVE now
'How many have you got made now then?'

MH *Mmm,* *ké:i.*
HESITATION four
'Mmm, four.'

RH *Ké:i.*
'Four.'

MH *Mmm*
'Yes.'

KALAPUYAN = KALAPOOIAN FAMILY*

Northern: *Tualatin = Wappato Lake = Atfalati = Tfalati, Yamhill = Yamell*
Central = Santiam: *Ahantchuyuk = Pudding River, Luckiamute = Lakmiuk = Lakmayut, Santiam, Mary's River = Kalapuya Proper, Lower McKenzie River*
Southern = Yonkalla = Yoncalla

The Kalapuyan languages were formerly spoken in western Oregon along both sides of the Willamette River. There were three mutually unintelligible groups of dialects. The Northern dialects, Tualatin and Yamhill, differed considerably. Tualatin was last spoken by Louis Kenoyer (1867-1937) and Yamhill by Louisa Selky, who died in 1915. The half-dozen or more Central dialects were quite similar. Those documented are Ahantchuyuk, Luckiamute, Santiam (south and east of present Salem), Mary's River (around present Corvallis), and Lower McKenzie River. In 1937 perhaps a half-dozen Central Kalapuyan speakers remained, all over 60 (Jacobs 1945: 8). Santiam survived into the 1950s. Of the Southern dialects, only Yonkalla is attested. In 1937 it was partly remembered by only one woman, Laura Blackery Albertson (Jacobs 1945: 8). After 1915 or 1920, none of the languages was used in daily conversation.

In 1877 Gatschet collected extensive lexical, syntactic, and textual material in Tualatin at the Grand Ronde reservation, primarily from Peter Kinai and Yatchkawa. He also collected material from Yamhill, Ahantchuyuk, and Lakiamute. While the work shows inaccuracies in transcription and translation (Jacobs 1945: 155), it did provide a foundation for later reelicitation by others. In 1913-4 Frachtenberg worked through the Gatschet material on Tualatin with Mr. Kenoyer (son of Peter Kinai), on Yamhill with Mrs. Selky, on Mary's River with William Hartless, on Lower McKenzie with Grace Wheeler, and on Yonkalla with Lucy Jackson and Mary Allen. De Angulo worked again with Mr. Kenoyer in 1928 and 1929. Between 1928 and 1936, Jacobs reelicited the earlier material and added more, working with the same Tualatin speaker, Mr. Kenoyer; with two Santiam speakers, John Hudson and Eustace Howard; and with Yonkalla speakers Mrs. Albertson (sister of Mrs. Jackson) and Cephas Tipton. An extensive text collection appears in Jacobs 1945 in three parts: (I) Santiam ethnologic texts, (II) Santiam myths, and (III) additional texts in Tualatin (from Gatschet), Yamhill, Mary's River, and Lower McKenzie River. Phonetic notes provide values of the symbols used, and each text is accompanied by a free translation but no interlinear glossing. Appendices index ethnologic topics and Chinook Jargon words appearing in the texts. Fieldnotes from Gatschet and Frachtenberg are in the NAA, those from Jacobs at the University of Washington.

The phonologies of the Kalapuyan languages are generally similar, particularly in their consonants. Berman 1990b reconstructs three series of stops: plain voiceless *p, t, c, k, k*^{w} (written *b, d, g, gw*); aspirated *p*^{h}, *t*^{h}, *c*^{h}, *k*^{h}, *k*^{hw} (written *p, t, c, k, kw*), and

ejective *p̓, t̓, c̓, k̓, k̓ʷ*; and *ʔ*. Jacobs noted that the Kalapuya ejectives resembled those of the neighboring Alsea in being unusually weak, with little explosion or delay of release, unlike the fortis ejectives of other languages in the area. Berman reconstructs fricatives *f, s, ɬ, h*. The *f* was bilabial; the *s*, like the *cʰ and c̓*, ranged between apical ([s], [ts]) and laminal ([š], [č]); and *ɬ* became voiced intervocalically. There were 5 resonants *m, n, w, y, l*. Berman reconstructs short and long vowels *a, a·, e·, i, i·, o, o·, u, u·*, and diphthongs *ai, au, iu,* and *ui*. All syllables have a consonantal onset with *ʔ* as a default value. Stress is initial. Phonological developments within each of the dialects are also traced in Berman 1990b.

Berman describes an early pattern of consonant symbolism in which 'aspirate, inaspirate, and glottalized stops alternated, and *c* alternated with *s* and *t'* (1990: 30). Alternations can be seen in Santiam *tk̓ʷák̓ʷaʔ* '(female) frog', *tkʷákʷa* '(large) frog, (bull) frog'; *kláisisu* 'to smell (intr., of a good odor)', *k̓láisisu* 'to stink'; *mántfitai* 'to compete, to race each other', *máncfitai* 'to wrestle together'.

Subject pronouns, interrogative markers, and adverbials appear as proclitics on verbs, and aspect and number as prefixes. Possessive pronouns are proclitics on nouns, and referentiality and oblique case are indicated with nominal prefixes (Rude 1986a). Reduplicative suffixes on verbs mark iteration. Other suffixes mark the involvement of a body part in an action, applicatives, pronominal objects, etc. Tualatin alone shows sex gender, with the pronoun *két·akʰ* for human females and *kó·kʰ* for all other referents. Because Tualatin bordered Clackamas Chinook, Berman 1988 suggests that the gender distinction may have been borrowed. Word order is fluid.

A relationship between Kalapuyan and Takelma was first proposed in 1918 by Frachtenberg, who provided 55 possible cognate sets between St. Mary's Kalapuya and Takelma. He also suggested a possible relationship to Chinookan and ultimately an affiliation to the hypothesized Penutian stock. Sapir, who had worked with Takelma, kept them separate in his 1921 classification, however. In 1953 Swadesh tape-recorded some Santiam material from Mr. Hudson and compared it with notes from Frachtenberg and Jacobs (Jacobs 1970: 67) and with Sapir's Takelma, proposing 97 new sets (1965), which he termed Proto-Takelman (Proto-Takelma-Kalapuyan). Based on these sets, Shipley began reconstruction of the phonologies of Proto-Kalapuyan (1970) and of Proto-Takelman (1969), providing 69 reconstructed Proto-Takelman forms. Working from the more extensive Jacobs notes, Berman continued the reconstruction of Proto-Kalapuyan, discovering some 600 possible Kalapuyan sets, and the reconstruction of Proto-Takelman, proposing 47 new sets (1988, 1990b). He reported that of Frachtenberg's 55 sets, a good two-thirds appeared correct, and of Swadesh's 97, only 18 appeared correct, 6 possible, and 73 clearly wrong. More than 100 sets in all appeared promising, from a variety of semantic domains, including

much basic vocabulary: 'go', 'start', 'build fire', 'throw', 'father', 'foot', 'dance', 'be sleepy', 'hold', 'rest, lie', 'cook', 'swim', 'be, sit', and many more. The forms and meanings within each set match closely. At the same time, however, the grammars of Kalapuya and Takelma are very different. Berman (1988) found only three possibly cognate grammatical morphemes, one shared by other neighboring languages, and the morphological structures of the two show little parallelism. Kendall 1997 examines some possible phonological and morphological similarities in detail.

In 1998 Kendall and Tarpent presented a closer comparison of the extant materials. When Swadesh had compared his 100-word lists from Kalapuya and Takelma in 1965, he had found 48 percent to be cognate. Kendall & Tarpent found that the compared forms were often either so different as to indicate no relationship, or so similar as to suggest borrowing. Among Swadesh's sets are, for example, Takelma *g-oó-m* 'we', Santiam *s-t-uu* and Atfalati *s-t-u*; Takelma *beém* 'tree', Santiam *wʔataak*, Atfalati *watik*, Yonkalla *pya*; Takelma *laa-p* 'leaf', Santiam *kwhayk*, Atfalati *puhw*. Also, in numerous cases Takelma and Kalapuya share forms with other neighboring languages but not with each other, suggesting either areal or deeper genetic relations.

Frachtenberg (1918) had listed structural differences and similarities. The differences are considerable. Kendall & Tarpent found the similarities he listed misleading. Some are purely negative, such as the lack of reduplication, lack of dual number, and lack of nominal case. Both show reduplicative suffixes, but the actual processes are different. Frachtenberg had noted the use of body-part nouns as instrumental affixes. Takelma does show loose incorporation of this type before the root, but the instrumentals identified in Kalapuya are actually simple nouns which follow the verb. Kendall & Tarpent demonstrate that certain superficially similar formations actually have quite different structures:

Santiam Kalapuya	Takelma
defúʔgu	*desiipgwiip*
de-fúʔg-u	*de-siip-gwii-p*
2SG-close-INTRANSITIVE	lip-close-REFLEXIVE-2SG.IMPERATIVE
'Close shut!'	'Close up!'

Overall morpheme order in the two languages is entirely different.

Phonologically, Kalapuya patterns with the neighboring Cayuse and Molale, in containing *f, ɬ*, uvulars, and unusual clusters, but no central vowel, no vowel harmony, and no ablaut. Takelma patterns with Yokuts with at least one central vowel, vowel harmony, a *d/l* alternation, ablaut, and glottalization, but no *f, ɬ*, or uvulars.

They conclude that any similarities are due to contact and perhaps a common Penutian affiliation, but that there is no special relationship between the two.

Karankawa = Clamcoēts = Clamcoches = Clamcoet = Clamcoēhs*

Karankawa was once spoken along the south coast of Texas and on adjacent islands. The last speakers perished in 1858 (Swanton 1940: 4). The earliest documentation of the language is a list of 29 words dictated in 1689 by two French brothers, Pierre and Jean-Baptiste Talon to M. de Boissieu at Morlaix in Brittany. Survivors of the Karankawa massacre of La Salle's colony near present Matagorda Bay, the two had lived among the Karankawa in 1687-9 before being captured by the Spanish then rescued en route to Spain by a French frigate (Villiers du Terrage & Rivet 1929: 309-10). An English translation of the document and commentary appear in Troike 1987. A second vocabulary of 106 words was recorded in 1720 by Jean Béranger, pilot on La Harpe's expedition (Villiers du Terrage & Rivet 1919). Over a century later, around 1828, a third vocabulary of 158 items was recorded by Rafael Chowell in the course of work with Berlandier for the Mexican Boundary Commission (Landar 1968). In 1884 Albert Gatschet encountered two elderly Tonkawas who had heard the language from Karankawa spouses. He recorded 6 words from Sallie Washington and 17 from Old Simon, which he published (1886b). Finally, Gatschet discovered a woman in Lynn, Massachusetts, Mrs. Alice Williams Oliver, who had spent her childhood in south Texas near the last Karankawa community. During those years she had kept a list of vocabulary, recording around 600 forms. The list had been lost, but when he visited her in 1888 she was able to remember 134 words, as well as some rhymes and sentences. These three lists, all from non-native speakers, were published in Gatschet 1891a. The Talon, Béranger, and Gatschet materials were reprinted in Swanton 1940, and this, along with that from Chowell, was assembled into a master list with commentary in Grant 1994.

The meager documentation available for the language provides little evidence of a genetic relationship with any other known language. In his 1891 article Gatschet tentatively suggested a possible link with Tonkawa, Cotoname, and Comecrudo, other languages of the area. In 1915 Swanton proposed grouping Karankawa, Comecrudo, and Coahuilteco on the one hand, with Tonkawa and Cotoname on the other, into a Coahuiltecan stock. Sapir then sought similarities between Coahuiltecan and Hokan, including 30 Karankawa forms (1920). After closer examination of Coahuilteco, Swanton became more skeptical of a Coahuiltecan group (1940). Working from Swanton's 1940 publication, Gursky investigated a possible relationship to Algonquian in 1963, and in 1968 Landar suggested a possible link to the Cariban family. None of these proposals has been considered successful, and Karankawa is generally classified as an isolate. Troike (1985) closely examined the Talon manuscript and determined that the name of the language cited there was *Clamcoëhs*, a variant of *Karankawa*.

Karuk (= Karok): *Happy Camp, Clear Creek, Lower River* (incl. *Katimin, Orleans*)

Karuk is spoken along the middle course of the Klamath River in northwest California by about a dozen fluent speakers, most elderly. About three dozen more are semi-speakers (Monica Macaulay p.c. 1991). Since it is not closely related to any other language, Powell 1891 listed it separately as Quoratean. In 1913 Dixon and Kroeber grouped it with other California languages into their Hokan stock, and in 1929 Sapir proposed a Northern Hokan subgroup, later termed Kahi, consisting of Karuk, Chimariko, Shasta, Achumawi, and Atsugewi. In the 1920s Harrington distinguished the three dialects listed above, but no dialectal differences are apparent at present.

Kroeber 1911 provides an early sketch of the language with text. Excellent documentation of the language is in Bright 1957, which contains detailed descriptions of phonetics, phonology, morphophonemics, morphology, and syntax, along with a rich collection of texts (some reprinted in Bright 1977 and 1980) and dictionary. Material cited here is drawn from that source. Texts also appear in Harrington 1930a, 1932a,b, de Angulo & Freeland 1931a, and Hymes 1997. Lang 1994 contains a prayer and five tales in Karuk with facing page translations, introductory material on the language and culture, and a glossary. Bright 1952 describes borrowings and neologisms in the language. Hamp 1958b comments on syllable structure, Macaulay describes reduplication and its implications for stem structure (1993), 'endoclitis' (1989), and the suffix *-ap* as an inverse marker (1992).

Unlike other languages in the area, Karuk contains only one series of obstruents: *p, t, č, k* and glottal stop *ʔ*. Fricatives are *f, θ, s, š, x,* and *h*. With a few exceptions, *š* is an automatic alternant of *s* following syllables containing *i* or *y*. Sonorants include *v*, described as an unrounded bilabial spirant, an alveolar flap *r*, and palatal glide *y*. Obstruents and nasal sonorants are automatically lengthened in certain contexts defined by syllable weight. Apex vowels *i, a,* and *u* occur both short and long, but the mid vowels are always long: *e·* and *o·*. There are three pitch accent distinctions, termed acute (strong stress, high level pitch), circumflex (strong stress, falling pitch), and no stress: *pá·h* 'boat' versus *pa·h* 'peppernut'. Morphophonemics are complex.

Nouns may be monomorphemic (*kač* 'son'), compound (*axiče-·krívra·m* 'child-house' = 'womb'), or derived (*ʔanamá-hi·čva* 'child-imitation' = 'doll'). Pronominal prefixes specify possessors: three persons in singular and plural and two impersonals. The prefixes can also indicate more general relations: *ʔáʔ kuma-ʔ*e*ris* 'above its-floor' = 'upstairs'; *ʔo*e*k vá-hih* 'here its-language' = 'the Karok language'.

Verb morphology is more elaborate. Some verb roots include features of number or shape as part of their meanings: *ʔí·hya* '(a long object) to stand, be', *ve*e*hriv* '(one or more long objects) to stand, be', *ihyárih* '(singular animate) to stand', *ʔiruve*e*hriv*

'(dual or plural animate) to stand', etc. Many roots contain sub-morphemic elements that resemble the instrumental prefixes of other California languages: *páčup* 'to kiss', *pápuθ* 'to chew', *pačnut* 'to suck on', *paxut* 'to hold in one's mouth', *paxnik* 'to blow a whistle' (Bright 1957: 87, Haas 1980). Among the verbal prefixes is an iterative: *ip-na·* 'to come back'. Partial, or occasionally full reduplication is used to derive verbs describing repeated or intense actions: *ʔáxuh* 'to cough', *ʔaxuh-ʔáxuh* 'to have tuberculosis'. Manner suffixes add meanings such as 'closing up' (*ikrív-čak* 'sit-block' = 'to sit in the way') and 'on(to) a horizontal surface' (*θí·v-tak* 'be-on' = 'to lie on').

Rich sets of suffixes specify location and direction, with meanings like 'thither', 'hither', 'hence downriverward', 'hither from downriver', 'down from a considerable height; hence downhillward', 'up to a considerable height; hence uphillward', 'hither from uphill', 'hence upriverward', 'hither from upriver', 'up to the height of a man or less', 'down from the height of a man or less', 'hence across a body of water', 'hither from across a body of water', 'horizontally away from the center of a body of water', 'horizontally toward the center of a body of water', 'into one's mouth', 'out of one's mouth', 'into a container', 'out of a container', 'into or onto fire', 'in through a tubular space', 'out through a tubular space', 'in through a solid', 'out through a solid', 'into an enclosed space', 'out of an enclosed space', 'in opposite directions', 'toward each other', 'here and there within an enclosed space', 'here and there in an open area', and others: *ʔêθ-sip* > *ʔe·čip* 'take-up.to.the.height.of.a.man.or.less' = 'to pick up' and *ikré·myá·h-rupu* 'blow-hence.upriverward' = 'north wind to blow'. Other derivational suffixes include a purposive (*imká·nv-ar* 'to.gather.food-go' = 'to go gather food'), an instrumental (*ikrúp-ara* 'sew-with'), and a benefactive (*ikšúp-ihi* 'point-for' (someone) = 'to teach').

Other derivational suffixes include a marker of plural action, a causative, a comitative, and a reflexive. There are a number of nominalizers that yield terms referring to objects: *ʔav-a* 'eat-NOMINALIZER' = 'food', *ʔam-kir-a* 'eat-on-NOMINALIZER' = 'table'; to agents: *vik-a·n* 'weave-NOMINALIZER' = 'weaver'; to refuse: *vuxič-êʔp* 'to saw-NOMINALIZER' = 'sawdust'; to locations: *imθatvá-ram* 'to.play.shinny-NOMINALIZER' = 'shinny field'.

Verbs contain pronominal affixes referring to their core arguments. There are distinct forms for singular and plural first, second, and third person animates, in indicative and imperative, but no overt marker for inanimate third persons. First persons affected by states may be referred to by an agent pronoun *ni-* 'I (it)' or by a patient pronoun *na-* '(it) me': *ni-xúrihi* and *na-xúrihi* both mean 'I am hungry'. Passives may be formed with third person plural agents: *kun-mah* 'they/him-see' = 'they see him' or 'he is seen'. Finally, tense enclitics may follow either nouns or verbs functioning as predicates to distinguish future, anterior, or ancient time.

The passage below comes from a text told by Mrs. Julia Starritt (Bright 1957: 143).

pa=ʔára·r	*ʔu·m*	*pu=ʔipí-tih=ara*
the=person	he	NEGATIVE=say-DURATIVE=NEGATIVE

'The Indian did not say

pa=mú-ʔarama	*mú-θvuy*
the=his-child	his-be.named.NOMINALIZER

his child's name

pa=t-u-ʔív-aha·k.
the=PERFECTIVE-3SG-die-when
when it died.

káru	*vúra*	*ko··-vúra*	*pa=mu-ʔára·ra-s*
also	INTENSIFIER	SO.much-INTENSIFIER	the=POSSESSIVE-person-PL

And when any of his relatives

tá	*kun-ʔív-aha·k*
PERFECTIVE	they-die-when

died,

pu=ʔipí-tih=ara	*mukun-ʔíθvuy.*
NEGATIVE=say-DURATIVE=NEGATIVE	their-be.named.NOMINALIZER

he did not say their names.

"va·	*ʔu·m"*	*kun-ipí-ti*	*"pitaxyárih."*
that	it	they-say-DURATIVE	swear.NOMINALIZER

"That", they said, was "swearing".'

Keres: *Acoma, Laguna, Zia, Santa Ana, San Felipe, Santo Domingo, Cochiti*

The Keres language is comprised of dialects spoken in pueblo communities in New Mexico. Each is mutually intelligible with its neighbors. Davis 1959 posits a division into a Western dialect group spoken at Acoma and Laguna pueblos, and an Eastern group at the Rio Grande pueblos Zia, Santa Ana, San Felipe, Santo Domingo, and Cochiti. Valiquette suggests a continuum of pairs: Acoma/Laguna - Zia/Santa Ana - San Felipe/Santo Domingo - Cochiti (p.c. 1995). He gives the following estimates of speakers: 1,930 at Acoma, mostly over 30 years of age (50 percent of the population), 2,060 mostly over 40 at Laguna (30 percent), 504 mostly over 20 at Zia (70 percent), 384 mostly over 25 at Santa Ana (60 percent), 1,985 including children at San Felipe (90 percent), 2,965 including children at Santo Domingo (95 percent), and 525 mostly over 30 at Cochiti (50 percent). Keres is not demonstrably related to any other languages. Evidence for a possible link with the Caddoan family proposed by Swadesh in 1967 has proven problematic (Rood 1973, Davis 1974).

Some good documentation of the language has been published, and more would be important, but not all communities are receptive to linguistic work. There is a grammar of Santa Ana in Davis 1964, grammars of Acoma in Miller 1965 and Maring 1967, and a grammar of Cochiti in Fox 1959. The Laguna text in Boas 1923 contains extensive grammatical annotation, and Valiquette 1990 contains a grammatical sketch of Laguna as well as a detailed guide to earlier sources. Laguna texts are in Boas 1923, 1925, and 1928a, and 38 Acoma texts are in Miller 1965. Phonology is described in Spencer 1946 and Miller & Davis 1963. Kinship terminology is in Mickey 1956 and Miller 1959c, Spanish loans in Spencer 1947 and Miller 1959-60, and special speech forms, including ceremonial and men's and women's speech, in Hrdlička 1903, White 1944, Maring 1975, and Sims & Valiquette 1990. A list of Keresan linguistic work, both published and unpublished, is in Davis 1963.

The structure of the language is illustrated here with material from Davis' 1964 grammar of the Santa Ana dialect. The consonant inventory includes voiceless unaspirated obstruents written *b, d, dʸ, g,* voiceless aspirated obstruents written *p, t, č, k,* and ejectives *p̓, t̓, č̓, k̓*. There are alveolar and retroflex affricates, voiceless unaspirated *z, ẓ,* voiceless aspirated *c, ç,* and glottalized *c̓, ç̓*. Voiceless sibilants are plain *s, ṣ, š* and glottalized *s̓, ṣ̓, š̓*. Sonorants are *m, n, r* (a flap), *w, y* and their glottalized counterparts *m̓, n̓, r̓, w̓, y̓*. There are two laryngeals, *ʔ* and *h*. The five vowels, *i, e, a, ə [ɨ], u,* are devoiced in certain contexts. They show contrastive length. Syllables may be unaccented or high ˊ, falling ˆ, breathy ˋ, or glottal ʼ.

Verbs are inflected with pronominal affixes specifying their core arguments and mode. First, second, third, indefinite, and fourth (obviative) persons are distinguished. Subjects of intransitives are usually expressed with a prefix: *ṣ-úpə* 'I ate', *ṣ-úpə* 'you ate', *k-úpə* 'he ate'. With transitives, prefixes specify combinations of subjects and objects: *ṣ̓-àkɣ* 'I bit you', *č̓-àkɣ* 'you bit me'. Third person objects are not specified: *ṣ-èkɣ* 'I bit (him)', *g-àkɣ* 'he bit (him)', *sg-àkɣ* 'someone bit him', *c̓-àkɣ* 'the other bit him'. This last fourth person or obviative is also used when the subject of the action is inferior to the object, as when an animal is the subject and a human being the object.' (1964: 76) Singular, dual and plural are distinguished. The number marking takes a variety of forms, involving prefixation, suffixation, other alteration of the stem, or a combination: *g-úm̓ą*, 'he left', *g-û·m̓ą* 'they two left', *z-ê·m̓ą* 'they left'; *sèkɣ* 'I bit him', *sé·ʔèkɣ* 'I bit them two', *séiy̓àkɣ* 'I bit them'. As in many languages, alternate stems are used in some cases for subjects of different number. The pronominal affixes distinguish six modes: indicative (*c̓-í·zúwą* 'I paid him'), negative (*skʸ-í·zúwą* 'I (didn't) pay him'), dubitative (*i̓-í·zúwą* 'maybe I paid him'), hortative (*k̓á-izúwą* 'let me pay him'), negative hortative (*n̓-í·zúwą* 'let me (not) pay him'), and future hortative (*n̓-í·zúwą* 'let me pay him (in the future)'). Indicatives are used not only for statements but also for presupposed knowledge, subordinate clauses, and content questions. The dubitative is used when an action is in doubt, for yes/no questions, and when an event was not experienced by the speaker, as in stories. Only realis verbs distinguish person. In irrealis constructions such as the future, an auxiliary carries pronominal and modal inflection: *ṣ-úpę* '1-eat' = 'I ate', *n̓-úpę ṣ-i* 'IRREALIS-eat 1-AUX' = 'I will eat'. Verbal inflection involves great phonological complexity.

Voice is distinguished by a special set of pronominal prefixes followed by the reflexive-reciprocal prefix *-a-* (*s̓-à-ukąčą* 'I saw myself') or the passive prefix *-áʔa-* or *-á-*. Passives show a plural subject prefix: *sk̓-áʔá-izúwa·n̓ę* 'I was paid'. Benefactives are derived with a combination of prefixal and suffixal morphology: *c̓ínàtą* 'I bought it', *c̓únàdani* 'I bought it for him.'

Aspectual distinctions are marked by suffixes. One is termed a continuative: *súukąčą* 'I saw him', *súukąčan-ikuɣą* 'I am looking at him'. Another marks unfulfilled action: *sup̓ę* 'I ate', *sup̓ęw-ę* 'I have come to eat'. A third indicates a remote state: *gə́·i̓á* 'it is full', *gə́·i̓â·m-ą* 'it is full (remote from speaker)'.

Various kinds of adverbial subordination are also indicated by suffixes: *sk̓úizúwą* 'he paid me', *sk̓úizúwa·n-ę* 'when he paid me', *sk̓úizúwa·n-u·* 'if he pays me'.

Uninflected words function as nouns (*dîyą* 'dog'), adjectives (*ráwá·* 'good'), temporals (*súwá* 'yesterday'), locatives (*yúk̓ɣ* 'yonder'), directionals (*dʸi* 'up'), indefinites (*zi* 'something, what?'), modals (*zázi* 'not'), connectives (*gu* 'and'), discourse particles (*ʔai* 'and then'), and exclamations (*ha·* 'yes'). Some uninflected words have internal derivational structure. Some are instruments, such as 'axe', formed from the verb 'to chop' plus prefix *ʔú-* and suffix *-n̓į*: *ʔúkɣpąwą n̓į* 'ax'. (Kinship terms may be used as verbs whose pronominal prefixes specify their possessors.) Some placenames are derived from words designating their

inhabitants: *sâ·ni* 'a person from Zuni', *sá·ní-zé* 'Zuni Pueblo'. More common is the derivation of inhabitants from placenames: *dámáyá* 'Santa Ana Pueblo', *dámáyâ·m̨ę* 'person from Santa Ana'.

Some of these structures can be seen in the text below from Davis (1964: 155-75). The words glossed PRT are narrative particles serving a variety of functions.

dĭʔái	*ʂu*	*ʔe*	*hauʔ*	*d-áʔáćį*	*sandiyâ·kų*
there	PRT	PRT	toward	3DUBITATIVE-arrive	St. James

'Saint James arrived

ʔai	*ʂu*	*ʔe*	*ʂu*	*há·di*	*čí·ná*	*dᵛ-á·ɬâ·m-ą*
PRT	PRT	PRT	PRT	where	river	3DUBITATIVE-full-REMOTE.STATE

at the ocean

zázi	*ʔíɬe*	*dᵛúm̨ą*
not	able	3DUBITATIVE-emerge

and was not able to cross.

ʂu	*ʔe*	*ɬa*	*ʂu*	*č-úidá·ʔan-ikųyą*	*dúkέ·*	*dᵛi*
PRT	PRT	thus	PRT	3DUBITATIVE-ask-CONTINUATIVE	that way	up

So he was asking

ʂu	*ʔeu*	*ʂu*	*sáʐ-ánáisdᵛų-šę*	*č-uidá·ʔan-ikųyą*
PRT	PRT	PRT	1INDICATIVE-father-absent	3DUBITATIVE-ask-CONTINUATIVE

our father

gúẃa·	*ʔéza*	*dúkέ·*	*ku*	*ćićį*	*g-á·ɬâ-·mą*	*ní-um̨ą*	*gún-ę*
how	at least	that way	south	water	INDIC-full-REM.STATE	IRR-emerge	3INDIC-SUB

how he might cross the ocean.

ʔe ʂu ʔe yúsí	*ǹə*	*ʔeu*	*dyá·mí*	*ʔeu ʂu ʔe yúsí*	*ǹə*	*ɬ-ágúyan-ę.*
from there	down	EMPH	eagle	from there	down	3DUB-PASSIVE-send-PL

Then an eagle was sent down from above.

ʂu	*ʔe*	*hauʔ*	*dí-uẃáćį.*
PRT	PRT	toward	3DUBITATIVE-approach

The eagle approached.'

KIOWA-TANOAN FAMILY

Kiowa

Tiwa

Northern Tiwa

Taos

Picuris

Southern Tiwa: *Sandia, Isleta, Ysleta del Sur*

Tewa: *Arizona Tewa = Hopi-Tewa = Hano = Tano (First Mesa), Rio Grande Tewa (Santa Clara, San Juan, San Ildefonso, Nambe, Pojoaque*, Tesuque*)*

Jemez = Towa, Pecos*

The Kiowa-Tanoan family consists of four branches: Kiowa, Tiwa, Tewa, and Towa. The Kiowa have been on the southern Plains since at least 1700, while the Tiwa, Tewa, and Towa, known collectively as Tanoan, have been in the Southwest for a long time. The relationship among the Tanoan languages was recognized in Powell 1891. They were first linked to Kiowa in print in 1910 when Harrington presented a list of likely cognates (1910a). Additional evidence was offered in Harrington 1928, Miller 1959b, and Trager & Trager 1959. The relationship was established definitively in 1967 with Hale's reconstruction of Proto-Kiowa-Tanoan phonology. What appears to be a cleavage between Kiowa and the Tanoan languages may be the result of their long geographical separation; though the Tanoan languages share much vocabulary, resemblances in grammar are no greater among them than between them and Kiowa (Hale & Harris 1979). Rio Grande prehistory is discussed in Davis 1959 and Trager 1967, and internal relationships in Watkins 1978a. A deeper relationship between Kiowa-Tanoan and the Uto-Aztecan family has been hypothesized but remains under investigation. (The proposal is discussed in section 6.3.) Surveys of the family can be found in Voegelin & Voegelin 1973 and Davis 1979. An annotated bibliography is in Sprott 1989. Studies of contact are in Yumitani 1987 and Bereznak 1995. The present sketch has benefited greatly from a seminar on Kiowa-Tanoan given by Laurel Watkins at the 1995 Linguistic Institute in Albuquerque.

The Kiowa now live primarily in southwestern Oklahoma in Caddo, Kiowa, and Comanche counties. There may be as many as 300 adult speakers of varying fluency (Parker McKenzie). A guide to Kiowa materials in the Smithsonian is in Merrill et al. 1997. Early vocabulary appears in Mooney 1898. Important early work was done by J.P. Harrington, resulting in a dictionary (1928) and texts (1946), and a popular sketch written with speaker Parker McKenzie (McKenzie & Harrington 1948). These were followed by grammatical sketches in Crowell 1949 and (Crowell) Trager 1960, discussions of number in Wonderly et al. 1954, pitch in Sivertsen 1956, verbal prefixes in Merrifield 1959a, noun classification in Merrifield 1959b, case marking in

Takahashi 1984, and financial terminology in Hickerson 1985. A comprehensive grammar is in Watkins 1984. Watkins has produced further important work as well, reconstructing the fate of glides (1978b), and examining positional verbs (1976a) switch-reference (1976b, 1978d, 1988, 1993), the relations between passives and inverses (1982, 1996), and anaphora (1990).

The Tiwa branch of the family consists of a subbranch Northern Tiwa, with two languages Taos and Picuris, and the Southern Tiwa language. The phonology of the Tiwa languages is reconstructed in Trager 1942, and the relationship between the Northern languages Taos and Picuris is examined in Trager 1969; they are close but generally considered mutually unintelligible. The Taos language is spoken by about 800 people of all ages (1980 census reported by SIL) at Taos Pueblo, 70 miles north of Santa Fe, New Mexico. Early notes on Taos phonology and morphology with a text and wordlist are in Harrington 1910b. Further grammatical description and notes on paralanguage are in Trager 1946 and 1948, 1954, 1960a, and 1961a,b. Pronouns are discussed in Harrington 1916a, names in Jones 1960, Trager 1960b, and Bodine 1968, days of the week in Trager 1939, and loanwords in Trager 1944 and Hall 1947.

The Picuris language was spoken by 124 in 1980 (SIL), the full population of Picuris Pueblo, 25 miles southwest of Taos. Harrington & Roberts published Picuris children's songs and stories with facing page translations in 1928. The ethnolinguistic situation is described in F. Trager 1968, phonology in F. Trager 1971, morphemic change in F. Trager 1975, syntax in Zaharlick 1977, and passives in Zaharlick 1982.

The Southern Tiwa language is spoken at Sandia and Isleta Pueblos. Sandia Pueblo is 15 miles north of Albuquerque, New Mexico, with 144 speakers counted in the 1980 census (SIL). At present speakers middle-aged and older are generally fluent, and a few children are still learning the language (Brandt p.c. 1995). A study of basic phonology, morphology, and language use at Sandia is in Brandt 1970a and linguistic stratification in Brandt 1970b. Isleta Pueblo is 15 miles south of Albuquerque, with 1588 speakers counted in 1980 (SIL). Early Isleta texts are in Gatschet 1891 and Lummis 1910. A grammar and text are in Leap 1970a, and description of noun classes in 1970b. Embedded questions are described in Gardiner 1977. Several studies have been done within the framework of relational grammar on argument structure (Allen & Frantz 1978, 1983, 1986, Allen & Gardiner 1981, Allen, Frantz, Gardiner, & Perlmutter 1990, Rosen 1990, Frantz 1995) and noun incorporation (Allen, Gardiner, & Frantz 1984, Frantz 1985, 1990). Argument structure is also treated in a Role and Reference framework in Laylin 1988, and incorporation is further discussed in Sadock 1985b. A third dialect of Southern Tiwa was spoken earlier at Ysleta del Sur by Isletans who migrated with the Spanish to El Paso in 1682, after the Pueblo Revolt. The language is no longer spoken fluently there but vocabulary was collected by Fewkes in 1901 and Harrington in 1909.

Tewa is spoken in a number of pueblos along the Rio Grande in New Mexico and in Arizona. The Rio Grande communities include Santa Clara, San Juan, San Ildefonso, Nambe, Tesuque, and Pojoaque Pueblos, though at Pojoaque the language is spoken by just a few families from Santa Clara and San Juan. Some Tewa speakers (Tano) may have once lived at Santo Domingo as well. Arizona Tewa is spoken by a group that left New Mexico after the Pueblo Revolt some 300 years ago for the Hopi Reservation, where they established the village of Hano on the First Mesa. Tewa speakers now number about 1500 including children, with about 300 in Arizona (Paul Kroskrity p.c. 1997). Early Rio Grande Tewa material was collected by Harrington, resulting in a brief description of the language (1910), followed by an ethnogeography (1916b) with phonological description, and a substantial topical lexicon. Harrington also contributed to an ethnobotany (Robbins, Harrington, & Freire-Marreco 1916), ethnozoology (Henderson & Harrington 1914), as well as publishing a description of kin terms (Harrington 1912) and three texts from a San Juan speaker (1947). Edward Dozier, a Tewa speaker from Santa Clara, made important contributions in both ethnology and linguistics. He collaborated with Hoijer on a description of phonemes (Hoijer & Dozier 1949) then published his MA thesis on verb structure (Dozier 1953). Borrowing is discussed in Dozier 1956 and singing and chanting in 1958. Dozier also worked among the Hopi-Tewa in Arizona, publishing an ethnography and a comparison of kin terms among the Hopi-Tewa, Rio Grande Tewa, and Hopi (1955). Kinterms are also discussed in Fewkes 1894 and Freire-Marreco 1914. Yegerlehner produced a phonology and morphology of Hopi-Tewa (1957) and published articles on phonology (1958, 1959a) and pronominal prefixes on verbs (1959b). Phonology and morphology of Rio Grande Tewa are described in R. Speirs 1966, and a dictionary of San Juan Tewa was compiled by Martinez, a speaker, in 1983. R. Speirs 1972 describes number and A. Speirs 1974 classificatory verb stems. Considerable work has been done by Kroskrity on Hopi-Tewa, with special attention to the cultural context of Tewa speakers surrounded by the Hopi community, surrounded in turn by the Navajo: 1977, 1978a,b,c, 1982, 1983, 1984, 1985a,b,c, 1992a,b, 1993, 1997. Texts are in Kroskrity & Healing 1978 and 1980. The inverse construction in Hopi-Tewa is considered in Klaiman 1989, 1991, 1993.

Jemez Pueblo, 45 miles northwest of Albuquerque, New Mexico, represents a consolidation of perhaps a dozen smaller settlements, including Pecos, about 20 miles southeast of Santa Fe. The last residents of Pecos moved to Jemez in 1838, probably following earlier migrations. The present population is around 2000, and nearly everyone, including children, knows the language (Sprott 1992). Jemez material is in Hale 1962, a description of phonology is in Martin 1964, of noun phrases and adverbial elements in Myers 1968, and syntax in Sprott 1992.

The language of one last group, the Piro, has not been classified definitively

because no speakers remain and documentation is sparse. The Spanish first described over 20 Piro pueblos south of the Southern Tiwa along the middle Rio Grande. For protection against Apache raids in the 17th century, the Piro banded together in Senecú and Socorro, then, after the Pueblo Revolt in 1680, moved south to El Paso to establish new pueblos of the same names. Attestation of the language consists of placenames recorded by the Spanish, a translation of the Lord's Prayer, a list of 180 words gathered by Bartlett in both villages in 1850, some of which were published in Bartlett 1909, and another brief vocabulary collected by Mooney in 1897. So far as is known, no fluent speakers remained by 1900. Harrington examined the vocabulary (1909) and compared it with that of other Tanoan languages, concluding that Piro represented a third division within the Tiwa branch. Examining the same material in 1967, Trager was inclined to consider it a separate branch within Tanoan. Struck by strong contrasts with other Tanoan languages, Leap (1971) suggested that it might not even be a Tanoan language. The speech of several other groups in the area, the Tompiros, Jumanos, Mansos, and Sumas, remains unclassified as well, due to lack of attestation. That of the Tompiro, originally living to the northeast of the Piro and southeast of the Southern Tiwa, is thought to be a dialect of Piro. Elizabeth Brandt has recently added 400 Piro and Tompiro names from Spanish missions to the record.

The Kiowa-Tanoan family offers a number of features of special interest, including an inverse number system, complex pronominal prefixes on verbs based on an inverse system, switch-reference, and noun incorporation. Some structures characteristic of the family are exemplified below with material from Kiowa, drawn from Watkins.

The phonological inventory includes plain obstruents *p, t, c, k*; ejectives *p̓, t̓, c̓, k̓*; aspirates *pʰ, tʰ, kʰ*; voiced stops *b, d, g*; fricatives *s, z, h*; nasals *m, n*, lateral *l*; and glide *y*. Ejective and aspirated stops are articulated forcefully. There are six basic vowels *i, e, a, ɔ, o, u*; long counterparts *i·, e·, a·, ɔ·, o·, u·*; nasalized vowels *į, ę, ą, ǫ, ǫ, ų*; long counterparts *į·, ę·, ą·, ǫ·, ǫ·, ų·*; and diphthongs *ay, ɔy, oy, uy*. Contrasts in nasalization can be heard in *tá·-* 'eye', *tą́* 'star', and *tó·* 'tepee', *tǫ́·-* 'talk'. Tone is contrastive on every syllable, with high ˊ, low ˋ, and a falling high-low sequence ˆ on long vowels (or vowel + resonant). Contrasts are in *k̓ó·* 'cold', *k̓ɔ̂·* 'knife, cut', or *ém-* third person singular reflexive, *èm-* third person plural reflexive. Laryngealized vowels and resonants are often associated with the falling tone: *tó·* 'house', *tô-y* 'in the house, room'. Phonological processes, including some affecting tone, are complex.

Three kinds of words can be distinguished: nouns, verbs, and uninflected particles, which include adverbials, modals, and numerals. Noun stems may be free roots (*í·* 'child, offspring', *kɔ́l* 'bison'), bound roots (*thǫ́·* 'leg', *zê·* 'arrow'), or compounds (*hǫ́·-tʰǫ̀·* 'metal-club' = 'axe', *k̓ól-pʰą̀·* 'neck-be.tied' = 'necklace'). Nouns fall into several classes. Class I (animate) nouns refer to human beings, to animals including birds and insects, to many body parts, and to some objects that might have an animate source

in legend or material, such as 'moon', and 'spoon' (made of buffalo horn). These nouns are inherently singular/dual, so that unmarked forms are interpreted as referring to one or two: *cę̂·* 'horse, two horses'. (Some basic forms contain the suffix *-dè*.) Their plurals are indicated by the suffix *-gɔ́* (or an alternate form): *cę̂·-gɔ̀* 'horses (3 or more)'. Class II (inanimate) nouns refer to objects: many plants, plant materials, natural and man-made objects, and a few body parts. These nouns are inherently dual/plural, so that an unmarked noun is interpreted as referring to two or more: *tʰǫ́·sè* 'bones'. When Class II nouns carry the suffix *-gɔ̀*, they are interpreted as singular: *tʰǫ́·sè-gɔ̀* 'bone'. The suffix is thus not actually a plural or singular marker, but rather a marker of unusual number, termed 'inverse number'. Class III nouns are inherently dual: *álɔ̀·* 'two apples'. The inverse number suffix indicates either singular or plural: *álɔ̀·-bɔ̀* 'one/several apples'. (*-bɔ̀* is a variant of *-gɔ̀*.) Finally, class IV nouns never carry any number marking at all: *kí·* 'meat', *c̓ó·* 'rock, stone'. Watkins notes that the classification remains productive. Borrowed nouns are easily classified: inanimate *spacecraft* and *antenna*, for example, are assigned to Class II, and the more abstract *zero, biology*, and *adverb* to Class IV. Additional number distinctions are made in the pronominal prefixes of verbs associated with the nouns, so that, for example, it can be seen whether an unmarked Class I noun refers to one or two individuals:

cę̂·	*gyà-tʰɔ́n*	horse	1SG.AGENT/SG.OBJECT-find.PRF	'I found a horse'
cę̂·	*nèn-tʰɔ́n*	horse	1SG.AGENT/DU.OBJECT-find.PRF	'I found two horses'

Nouns may be modified by relative clauses or by compounding with a stative verb. The compound is then inflected as a noun: *á·hį̨-pè·* 'cottonwood-dead' = 'dead cottonwoods'; *á·hį̨-pè·-gɔ̀* 'cottonwood-dead-INVERSE' = 'dead cottonwood'. Possession is shown by possessive prefixes on the noun (*k̓í·* 'husband', *á-k̓í·* 'your husband'; *cę̂·* 'horse', *ám-cę̀·* 'your horse') or by pronominal prefixes on an associated verb (*kút yą́-tʰɔ́n* 'books (3SG.AGENT/1SG.DATIVE/PL.PATIENT-find.PRF' = 'he found my books').

Verbs can show complex internal structures and may serve as complete clauses in themselves. All verbs contain at least a stem, a pronominal prefix, and a modal suffix. The stem may be a simple monosyllabic root (*só·* 'sew', *cé·* 'be short'). Verbs of position indicate number as a part of their meaning: *ą́·gyà* '(one or two) sitting', *k̓úl* '(several) sitting'. The stem may consist of a root plus transitive suffix (*pʰą́·* 'be tied', *pʰą̂y* 'tie'), or a root plus intransitive suffix (*gúl* 'write something', *gút-kyá* 'write'). The stem may be compound: noun-verb (*-cát-hę̀·dè* 'door-remove' = 'open the door'), verb-verb (*dę̀·-hę̂m* 'sleep-die' = 'be sleepy'), or adverb-verb (*t̓ɔ̀m-cán* 'first-arrive' = 'come first'). Such compounding is a kind of incorporation. Causatives are compounds with the verb root *ɔ́m* 'make' (*tá·-ɔ̀m* 'ripe/cooked-make' = 'cook'), and

resultative statives with the root *dɔ́·* 'be, exist' (*tʰêm* 'break', *tʰêm-dɔ̀·* 'be broken').

The pronominal prefixes constitute a phenomenally complex system, with around 90 forms in Kiowa (somewhat fewer in other Tanoan languages). In essence, they represent the core arguments of the clause. Core arguments are classified into three categories: Agents, Datives, and Objects. Agents represent the animate (or personified) agents of intransitive or transitive clauses ('I arrived', 'you found it'). Datives include experiencers, recipients, beneficiaries, and possessors ('I am clever', 'you like it', 'I gave it to him', 'he found my books'). All first and second person core arguments, including semantic patients, are classified as datives: 'she saw you'. The third category, Objects, contains only third persons, animate or inanimate: 'I found it', 'Did you tell him?' Plural and inverse number are distinguished for the third person animate Agent and Dative categories.

The pronominal prefixes represent the various possible combinations of these core arguments. The agentive-intransitive paradigm is used with both stative and active verbs: *dé·* 'be standing', *cán* 'arrive'. The dative paradigm is used when an animate participant is an experiencer, beneficiary, recipient, or possessor: *gú·* 'be clever', *ǫ́·dép* 'like', *ɔ́·dèp* 'be unable'. The same forms are used for ditransitives involving an Agent, Dative, and Object: *ǫ́·* 'give'. The reflexive/reciprocal paradigm is used with verbs indicating changes in posture (*hâ·* 'arise'), other bodily movement or activity (*bô·tɔ̀* 'bend over'), and certain mental activities (*hɔ́p* 'catch on, recall'). The transitive paradigm is used in clauses with an Agent and an Object: *tʰǫ́·* 'find'. Not all participants are represented overtly in every pronominal form. The pattern reflects an empathy hierarchy: 2 > 1 > animate > inanimate. The initial consonant of the prefix specifies an animate participant, either the Agent or the Dative, selected according to person. A second person is preferred over first, and first over third. The workings of the hierarchy can be seen in 'He found my books' cited above, with the prefix *yą́-* 1SG.DATIVE/PL.PATIENT 'my/them', in which the Agent is not overtly marked.

Verbs are inflected for aspect/mode, distinguishing perfective and imperfective events. For each there is a basic form, an imperative, an irrealis (future/potential), and a hearsay. Negation is indicated with a suffix plus the particle *hɔ́n*: *hɔ́n àn Ø-mɔ́·tó·b-ɔ̂·* 'NEGATIVE HABITUAL [3SG]-calm-NEGATIVE' = 'He is never at ease.' Distributive suffixes spread events and states over space or time: *hòt-gû·* 'travel-DISTRIBUTIVE-FUTURE' = 'run about'.

Kiowa is basically a verb-final language, though word order is fluid. Noun phrases may consist of a noun alone, a demonstrative or qualifier, both together, or a nominalized clause. Adverbials may be derived from nouns with locative or instrumental suffixes: *cát-kyà* 'door-at' = 'at the door', *mɔ́n-tò* 'hand-with' = 'with (my) hands'. Questions are introduced with a clause-initial particle. Other particles specify tense or aspect: *sɔ́t* RECENT PAST, *yát* IMMEDIATE PRESENT, *mîn* NEAR FUTURE, *àn* HABITUAL. Evidential particles indicate the relative certainty of information: 'clearly', 'never/unlikely', 'probably', 'maybe', 'might', 'might have', 'must', 'fortunately not'.

Relative clauses are formed by suffixing a basic number marker *-dè* or the inverse number marker *-gɔ̀* to the verb of the clause. They can be considered internally headed, though the clause may be separated from its head if it is long or for special focus. They may also be introduced by a subordinating particle *ɔ́gɔ̀*. Complements of verbs of saying are simply juxtaposed to the main clause. Basic coordination and subordination, however, is accomplished by three pairs of enclitics which identify clauses as representing elements of the same event or distinct events. Events represented as different often have different participants, so the system has sometimes been referred to as one of switch-reference. The same/different pairs of markers are *gɔ̀/nɔ̀* 'and, if' (sequential or conditional), *cę́·/ę́·* 'when, while' (simultaneous), and *kɔ̀t/ɔ̀t* 'yet, anyway' (contrary to expectation).

Some of these structures can be seen in the beginning of a story told by Parker McKenzie, recorded and analyzed by Laurel Watkins in 1978 (1984: 246-53).

kɔ́y-sę́·-pi̱-gɔ̀	*sę́·-tò-y*	*á-kóp-tê·*
Kiowa-peyote-eat-INVERSE	peyote-tepee-in	3PL-be.sitting.PL-HEARSAY

'Kiowa peyote adherents were seated in a peyote tepee

gɔ̀	*hétɔ́*
and.same	still

and before

hɔ́n	*hɔ́n-dé*	*gyà-há·p-ɔ̂·-hèl*	
NEGATIVE	some-BASIC	3SG.AGENT/PL.OBJECT/3PL.DATIVE-raise-NEG-HEARSAY	

anything had started

nɔ̀	*há·têl*	*hón-hè·bè-hèl*	*gɔ̀*	*tǫ́·n-ê·,*
and.different	someone	last-enter-HEARSAY	and.same	say-IMPRF.HEARSAY

when someone belatedly entered and said,

Ø-kʰi̱·m-e·	*kʲyą́·-hi̱·-dè*	*hi̱·-hèl,*
(3SG.AGENT/SG.OBJECT)-name-IMPRF.HEARSAY	male-real-REL	die-HEARSAY

naming a man who had died,

"sɔ́t	*yą́-háygyá,"*	*tǫ́·n-ê.*
just	1SG.DATIVE/PL.OBJECT-learn.PRF	say-IMPRF.HEARSAY

"I just learned about it," he stated.'

Klamath-Modoc = Lutuamian: *Klamath* (proper), *Modoc*

The Klamath language, or Klamath-Modoc, is represented by two principal dialects: Klamath (proper) and Modoc. The Klamath homeland was in south central Oregon, along the eastern slope of the Cascade Mountains around Klamath Marsh, Upper Klamath Lake, and the Williamson and Sprague Rivers. Modoc was to the south, around Lower Klamath and Tule Lakes extending southward toward the Pit River in northeastern California. Kinkade et al. (to appear) note that the name *Klamath* is probably from Upper Chinookan *łamał* 'their lake'. *Modoc* is the Klamath-Modoc word for 'southerner' (DeLancey p.c. 1995). Voegelin confirms an earlier statement by de Angulo and Freeland (1931b) that the dialects differed little more than 'the English of New England and that of Virginia', but notes some lexical and grammatical differences (1946b: 96). Comments from speakers to ethnologists Spier and Barrett suggest that there may have been some subdialectal variation. The speech of the Link River Klamath around Klamath Falls was said to differ from that of other Klamath, and the speech of the Gúmbatwas Modoc from that of other Modoc. Only one fluent Klamath speaker remains (Gordon Bettles p.c. 1998).

The language was recognized as an isolate, termed 'Lutuamian' in Powell 1891. There is evidence of a remote relationship to other languages in a Penutian stock. Klamath shows both lexical and grammatical similarities with the neighboring Sahaptian languages, some of which may be due to contact (Aoki 1963, Rigsby 1965, Rude 1987, DeLancey, Genetti, & Rude 1988, DeLancey 1992). Relationships with California Penutian languages may be closer. Resemblances to Yokuts and Wintun are discussed in DeLancey 1987a,b, 1991, and 1997.

There is good documentation of the language. Wordlists collected during the nineteenth and early twentieth centuries are listed in Barker 1964. Gatschet published a grammatical sketch (1878b), text (1879a), discussions of adjectives (1879b, 1880b), and songs (1894). Most important is Gatschet 1890, a two-volume work with dictionary, grammatical sketch, and texts from Modoc. De Angulo & Freeland 1931 contains additional material. The most important record of the language is in the texts, dictionary, and grammar published by Barker (1963a,b, 1964). It shows advances in accuracy of transcription and analysis of the elaborate morphology of the language, and has made possible considerable further work, serving in particular as a basis of discussion of phonology (Kisseberth 1972a,b,c, 1973a,b, White 1972, Keane 1973, 1974, Kaye 1976, Lightner 1976, Feinstein & Vago 1981, Clements & Keyser 1983, Levin 1984, Darden 1985, Waksler 1986, Blevins 1993). Material cited here is drawn from Barker 1963a,b and 1964.

The Klamath consonant inventory is typical of languages of the West. There are three series of stops: *p, t, č, k, q, ʔ; b, d, ǰ, g, g; ṗ, ṫ, c̣, k̇, q̇*. Those written as plain (*p*) are strongly aspirated word-initially. Those written as voiced (*b*) are plain initially but voiced between voiced segments. Ejectives contrast with stop + glottal clusters: *q̇iw* 'anus'; *qʔis* 'rattlesnake'. Fricatives are *s* (voiced intervocalically) and *h*. There are four plain, two voiceless, and two glottalized nasals: *m, n, ŋ, ɴ; M, N; ṁ, ṅ*. There is one plain, one voiceless, and one glottalized alveolar lateral: *l, L, l̇*. Glides are also plain, voiceless, and glottalized: *y, w; Y, W; ẏ, ẇ*.

There is a four-vowel system with distinctive length: *i, e, o, a; i·, e·, o·, a·*. Sonorants are syllabified between consonants, the glide *y* to *e·*, and *w* to *o·*. Long vowels descended from glides are subject to certain shortening processes that other long vowels are not. Stress falls on the last long vowel of a word (*čaɬá·wipga* 'is sitting in the sun'), the closed penult if there are no long vowels (*gatbámbli* 'returns home'), or the antepenult if the last two syllables are both open (*čáẇiga* 'is crazy').

Klamath morphological structure is much like that of many other North American languages, with relatively simple noun structures but complex verb structures. Nouns may be monomorphemic: *ni* 'snowshoe(s)', *sdikso·y'* 'shoe(s)'. They may contain a noun ending, perhaps descended from a deverbal nominalizer: *meY-s* 'trout'. Thirty-seven kinship terms contain special affixes: *p-tis-ap* 'father', *b-e·-p* 'daughter'. Vocatives are formed by reduplication: *loks* 'father's father', *loɬaks!* 'Granddad!'. Nominals may be compound (*loloqswe·gan* 'train' from *loloq* 'fire' + *we·gan* 'car', *waċa·k ṗapi·s* 'Montana Indians' from *wač-'a·k̇* 'dog-DIMINUTIVE' + *ṗan-y-s* 'eat-NOMINALIZER-NOMINALIZER' > 'dog eaters', *blaywa·s* 'golden eagle' from *blay* 'above' + *wa·-s* 'live-NOMINALIZER', *ṫeynniwa·s* 'daughter-in-law' from *ṫeyn* 'new' + *wa·-s* 'live-NOMINALIZER').

A diminutive suffix on nouns indicates smallness or cuteness: *pom* 'beaver', *poṁa·k* 'muskrat'; *q̇aẏe* 'intestines', *q̇aqẏeʔa·k* 'dumplings'. An augmentative has connotations of bigness, clumsiness, ugliness, and ridicule: *psi* 'nose', *psiḳaṁč* 'big old nose'. An instrumental adds the meaning 'with', 'by', or 'because of': *ṅep* 'hand', *ṅepbatga* 'with the hand(s)'. There are a number of locatives: *ẏaynṅa* 'mountain', *ẏayṅdal* 'toward the mountain'; *ʔambo* 'water', *ʔambotdat* 'in, on, into the water'. Reduplication can add specificity to a location: *ha·baksaksi* 'right at the top of the tree' from *ha·ba* 'top of a tree', *-ksi* 'place of'. Case suffixes mark possessors (*kowe* 'frog', *kowelam* 'frog's') and objects (experiencers, datives, or patients) (Rude 1988a).

Demonstrative stems distinguish proximate 'this', visible remote 'that', and absent 'that'. Suffixes mark plural number and case, and derive forms with meanings like 'this way' and 'this kind'. A definite article, which has developed from the visible remote demonstrative, is also inflected for case. There is a special adjective class that includes numerals. Adjectival stems, which can function either as nominal modifiers or as nominals, are identified by their occurrence with certain suffixes.

The independent pronouns distinguish first person, first person intensive

declarative, second person singular, first person plural, second person plural, third person plural, and third person plural intensive. All have 'objective' and 'possessive' forms. 'Objective' first or second person forms appear with intransitives to highlight emotional involvement: *ʔat ʔanɬ gattka* 'Now I (OBJECTIVE) am cold.' Barker notes that the pronouns appear in elicited translations but are rare in texts except with intensive or emphatic meaning. Intensive third person singular is usually indicated by a demonstrative. Fused forms mark transitives: *da·la ʔis wolq̓i!* 'dollar you-me loan' = 'Loan me a dollar!'

The verbal morphology is rich. Barker distinguishes 25 position classes: 3 prefix position, 5 stem positions, and 17 suffix positions.

The first verbal prefix, initial syllable reduplication, is a distributive. The others affect valency: a reflexive/reciprocal, two causatives, and a transitivity marker.

The stem structure consists of three parts: classificatory morphemes, major stem formants, and locative-directive morphemes. As DeLancey points out (1991), this structure is reminiscent of stems in a number of California languages (both some classified as Hokan and some classified as Penutian). The 72 classificatory morphemes listed by Barker generally reflect the animacy, shape, or number of the absolutive argument or an instrument, or a kind of action: *ni-wčn̓a* 'hits with a flat object as one goes along', *sdik-čn̓a* 'smells along, as a dog along a trail'. The classificatory morphemes never constitute stems alone, but their root-like meaning raises the question of whether they are better considered prefixes or bound stems. Major stem morphemes may occur alone as a stem and generally correspond in meaning to stems in other languages: *sle·* 'to see', *dye·mi'* 'to be hungry'. As in many western languages, stem morphemes may include number as part of their meaning: *dewy* 'to fire a gun, shoot an arrow once', *yo·* 'to shoot several times', *slin* 'hit, shoot one', *nkeysʔan* 'hit, shoot several'. The 118 locative-directive morphemes collected by Barker add meanings such as 'stuck in a tight place', 'out from underneath', 'into the fire', 'across', 'going to meet', and many more. A three-part stem can be seen, for example, in the verb *ko-čo·s-di·l-a* 'with.pointed.object-to.brush-underneath-INDICATIVE' = 'mops underneath'.

Verbal suffixes are arranged in three groups by Barker: aspects, modals, and derivationals. Aspects include a completive 'finished', andative 'action while moving', completive 'just did and no more', cislocative (action toward speaker), inceptive 'begin', repetitive 'back' or 'returning', durative, perfect, pejorative 'ruined forever', fortuitous 'almost' or 'came close to doing', habitual, immediate 'at once', intentional 'feel like', instrumental nominalizer that can also mean 'while', intentional 'plan to', benefactive 'for', desiderative, conative 'tried to', past habitual 'used to' or 'nearly', polite imperative, second instrumental nominalizer, and past nominalizer ('a bite' = 'place where one was bitten'). The modals, which are mutually inclusive, are an

indicative, abilitative/deontic ('can, ought to'), future intentive, past participle, singular imperative, second plural imperative, first singular hortatory 'let me', and first plural hortatory 'let us'. The derivationals are a past passive or stative participle 'having been V-ed or 'in a state of . . .', a purposive 'in order to' or 'because of', and a referential suffix that appears on subordinate verbs to indicate an argument coreferential with something previously mentioned: 'he smells [it burning]'. DeLancey 1991 suggests a slight revision in the organization of suffixes and proposes a reconstruction of pre-Klamath verb structure.

Word order is fluid, with all orders occurring. Sundberg 1987 reports that preverbal position is used for introducing and reintroducing referents into discourse, for disambiguation of reference, and at thematic junctures. Postverbal position is used for already topical referents and for those representing less important entities.

The passage below is from an anecdote told by Mrs. Pansy Ohles to Barker (1963a: 145). It illustrates the use of an initial classificatory element in the stem ('peeking'), number as part of the meaning of the stem ('plural objects fall'), final directionals in the stem ('down', 'in water', 'coming', 'around'), case on pronouns (objective on 'me', instrumental on 'tule mat') independent pronouns ('me', 'they', 'I'), nominalization (noun 'rain' from verb) and subordination by means of the nominalization ('by falling into the water'), and final indicative ('I was afraid').

qdo·č-ok	*sitk*	*qčo·l*	*he-tgi.*
rain-RESULTANT.NOMINALIZER	like	star	plural.objects.fall-down

'The stars fell like rain.

čoy	*ni-s*	*sa*	*slays-tga*	*wal-čn̓a.*
and	1SG-OBJECT	3PL	tule.mat-INSTRUMENTAL	cover-around

And they covered me with a mat.

čoy	*hok*	*he-w-o·k*	*čiW čiW*
and	the	pl.objects.fall-in.water-RESULTANT.NOMINALIZER	

And on falling into the water [they made a sound] "čiW čiW"!

čoy	*ni*	*qliq-ditgo·l-apg-a.*
and	1SG	peeking-out.from.under-coming-INDICATIVE

And I peeked out from under.

čoy	*mo···*	*ʔa-n*	*wos-a·.*
and	very	DECLARATIVE-1SG	fear-INDICATIVE

And I was very much afraid.'

Kootenai=Kutenai=Kootenay=Ktunaxa=Ksanka: *Lower Kootenai, Upper Kootenai*

The Kootenai language is spoken along the Kutenai River in British Columbia, Idaho, and Montana. Perhaps a dozen elders speak the language fluently, and another 100 know it to some extent. Two slightly different dialects are recognized, Lower Kootenai on the lower reaches of the Kutenai River in northern Idaho (Kutenai Tribe of Idaho at Bonners Ferry) and southeastern British Columbia (Lower Kootenay Band at Creston), and Upper Kootenai in British Columbia (Columbia Lake Band at Windermere, St. Mary's Band near Cranbrook, Tobacco Plains Band at Grasmere) and northwestern Montana (the Kootenai Tribe on the Flathead reservation at Elmo). At present it is considered an isolate, though links to Algonquian and Salish have been proposed (Sapir 1929, Haas 1965, Morgan 1980).

Vocabulary was collected during the 19th century by Hale, Tolmie, & Dawson (1884: 79-87B, 102-11B), and others. Gatschet published a note on a suffix (1893). In 1891 Chamberlain collected material in each dialect, including texts, and published vocabulary and grammatical discussions (1893, 1894a,b,c, 1895a,b, 1902, 1906, 1909, 1910). A grammar in Latin by the missionary Canestrelli was published in 1894. Boas visited the Kutenai in 1888 and again in 1914, going over the texts collected by Chamberlain among other things. In 1918 he published these and other texts along with a lexicon, and in 1927 he reprinted the Canestrelli grammar with annotations and additional examples, followed by notes on stem formation and the obviative, along with a text. Kin terms are discussed in Sapir 1918, 1919 and Boas 1919. Garvin did fieldwork in 1946 and 1950 and published a grammatical sketch (1948a,b,c, 1951a), narrative text (1953), and conversation (1954), as well as notes on loan phonology in names (1947), lexical innovations (1948d), and obviation (1951b). He took up problems of analysis in 1957 and 1958. Discussions based on Garvin's material are in Haugen 1956 on the syllable and Hamp 1958 on vowel length. Lawrence Morgan produced a grammar in 1991 in addition to other unpublished work. Dryer describes obviation and the inverse (1992a,b, 1994, 1997). Kootenai material cited here is drawn from Morgan 1991.

The phonological inventory is typical of the Northwest. There are plain stops *p, t, c, k, q, ʔ*, ejectives *p̓, t̓, c̓, k̓, q̓*, fricatives *s, ɬ, x, h*, plain resonants *(l), y, w, m, n*, and glottalized nasals *m̓, n̓*. There are short vowels *i, a, u* and long *i·, a·, u·*.

Also like other languages in the area, Kootenai contains an extensive inventory of affixes. Within the verbal morphology are 16 locative prefixes with meanings 'across', 'near', 'close against something', 'into the bush, thicket', 'straight up', 'into the ground', 'far', 'up to', 'out into the open, out onto a body of water', 'in', 'down', 'away from water', 'inside', 'toward water, into fire', and 'on top'. The prefix *ʔaq̓a-* 'into the bush/brush/thicket', for example, can be seen in *taxa-s hu=c̓i-na-ɬ ʔaq̓a-na-x=i*

'then-3 1=INCEPTIVE-go-ADVERBIAL into.thicket-go-RELOCATION=INDICATIVE' = 'then I went into the thicket'. A set of aspectual prefixes contribute such meanings as imperfective, continuative, and inceptive. A set of suffixes affect valence, including general transitivizers, passive, comitative, instrumental, associative, malefactive, benefactive, reflexive, and causative. The instrumental *-mu* can be seen in *ʔat=hu=s-quɬ-mu-n-ała?=ni ʔa·ququku?* IMPERFECTIVE=1-CONTINUATIVE-in.water-DITRANSITIVE-INSTRUMENTAL-CONNECTOR-1PL=INDICATIVE raft = 'We were using a raft to go on water.' There are intensive and frequentative suffixes, an inchoative, and statives. Number is not obligatorily marked for third persons, but there is a dual, collective, and distributive. The collective *-qan* can be seen in *pał k=yuna-qan-ku-x-n-i-y-am-is* 'EVIDENTIAL SUBORDINATE=have.much-COLLECTIVE-firewood-GOAL-ASSOCIATIVE-REFLEXIVE-CONNECTOR-INDEFINITE.HUMAN-3OBVIATIVE' = 'For everyone had a lot of firewood.' The distributive *-n̓* is in *hu=n-ʔup-ka-n̓-qu-x-n-ała?=ni* '1=PREDICATE-away.from.water-come-DISTRIBUTIVE-in.water-by.mouth-CONNECTOR-1PL=INDICATIVE' = 'Then we started to pull them (the fish) out.' There are two positional suffixes, one indicating a standing position, the other a horizontal position: *s-kik-łam̓-s=i niłsik-s* 'CONTINUATIVE-HORIZONTAL-head-3OBVIATIVE =INDICATIVE bull-3OBVIATIVE' = 'A bull's head lay there'. A set of modal-instrumental suffixes indicate manner: 'by hand', 'by foot or talon', 'by mouth', 'by body', 'by finger or pointed object', 'by heat or fire', and 'by blade'. The suffix *-x* 'by mouth can be seen in *maʔc ɬu-łam̓-a-ʔ-x-n=hu* 'PROHIBITIVE remove-head-EPENTHETIC-TRANSITIVE-by.mouth-CONNECTOR=1' = 'Don't bite my head off'.

The core arguments of a clause are indicated in several areas of the grammar. First and second person subjects are represented by proclitics on the verb: *hu=sahanni* 'I was bad', *hu=cxani* 'I spoke', *hu=nʔiktuquʔni* 'I washed him/her/it/ them'; *hin=sahanni* 'you were bad', *hin=cxani* 'you spoke', *hin=n̓iktuqúʔni* 'you washed him/her/it/them'. Plurality is marked by suffixes: *hu=sahannałaʔni* 'we were bad', *hin=sahankiɬni* 'you all were bad'. Third persons can be of several types. The primary third person (often the protagonist) is termed proximate. Secondary participants are termed obviative. Indefinite persons ('someone') are distinguished as well. Proximate third persons are unmarked: *sahanni* '(he/she/it/they) is/are bad'. Obviative and indefinite persons are indicated by suffixes: *sahan-si* 'the other(s) was/were bad' (obviative), *sahannnamni* 'somebody was bad' (proximate indefinite), *sahannnamisni* 'somebody else was bad' (obviative indefinite).

First and second person objects are specified by suffixes: *n̓iktuqunapni* 'he/she/it/ they washed me', *n̓iktuqunisni* 'he/she/it/they washed you'. Plural objects are also indicated by suffixes: *n̓iktuqunawasni* 'he/she/it/they washed us'. Interactions among third persons are indicated in a special way. If a proximate person acts on an obviative, there is no special marking: *wukati* '(he/she/it/they.PROXIMATE) saw (him/her/it/them.OBVIATIVE)'. If a secondary participant (obviative) acts on a primary

one (proximate), however, the obviative subject prefix appears, along with a special inverse suffix: *wu·kat-ap-s=i* see-INVERSE-3OBVIATIVE=INDICATIVE 'he/she/it/they (obviative) saw him/her/it/them (proximate)'. If both participants are secondary, so obviative, they, too are ranked. If a higher ranked obviative acts on a lower one, the simple obviative suffix is used: *wu·kat-s=i* see-3OBVIATIVE=INDICATIVE 'he/she/it/they (obviative) saw him/her/it/them (obviative)'. If the lower ranked obviative acts on a higher ranked one, however, the inverse suffix appears: *wu·kat-ap-sis=ni* see-INVERSE-3OBVIATIVE/3OBVIATIVE=INDICATIVE. Pronominal proclitics indicate possessors on nouns: *tkaxam̓ni ka=a·kitła?mił* 'he/she/it/they came into my house/tent'.

Indicative clauses are marked by an enclitic *=ni* (*?ik* 'eat', *?ik=ni* 'he/she/it/they ate'), and subordinate clauses by a proclitic *k=*. Subordinate clauses may be used as arguments (complements), modifiers (relatives) or adverbially. Questions are formed by giving rising intonation to subordinate forms: *k=wił-qa-?* *pus?* SUBORDINATE=big-STATIVE-INCHOATIVE cat = 'Is the cat big?' Word order is pragmatically determined, with more newsworthy information appearing early in the clause. Clauses often open with situational markers, such as a temporal particle, then continue with a verb, perhaps followed in turn by a nominal.

Some of these constructions can be seen in the passage from a text told by May Paul of St. Mary's band and analyzed by Morgan.

Taxa-s *n̓=uk̓n-ił* *huqna-n-iy-am=ni.*
then-3OBV PRED=sudden-ADV move.camp-COMITATIVE-RFL-3INDEF.HU=INDIC
'Then they suddenly moved camp.

c̓i-na-łunis-n-am=ni.
fast-go-travel.along-CONNECTOR-3INDEFINITE.HUMAN=INDICATIVE
They were moving along.

Qa-na-ł *łunis-n-am=ni=c*
thus-go-ADV travel.along-CONNECTOR-3INDEFINITE.HUMAN=INDICATIVE=and
As they were moving along,

taxa-s *n̓=uk̓n-ił* *c̓i-n-in-mit-qał-xu=ni.*
then-3SUBJECT PRED=sudden-ADV fast-go-x-throw-cloud-by.body=INDICATIVE
Then all of a sudden the cloud started moving fast.

S-na-ł *łunis-nał-ka?=ni* *?a·-qał.*
CONT-go-ADV travel.along-COM-3INDEFINITE.HUMAN=INDICATIVE NOUN-cloud
The cloud was on the move.'

MAIDUAN = MAIDUN = PUJUNAN FAMILY

Maidu = Northeastern Maidu = Mountain Maidu

Chico

Konkow = Northwestern Maidu: *Otaki, Metsupda, Nemsu, Eskewi, Pulga, Feather Falls, Challenge, and others*

Nisenan = Southern Maidu: *Valley (Yukulme, Pusune), Southern Hill (Forest Home, Placerville); Central Hill (Auburn, Colfax, Nevada City), Northern Hill = Oregon House*

The Maiduan languages were spoken at contact in northeastern California in the Sierra Nevada foothills and adjacent Sacramento Valley. Few if any speakers remain: SIL listed the number of speakers in 1977 as around 20 elders. The languages are quite similar phonologically and share many stems, but they differ considerably in their grammars and are not mutually intelligible. Maidu proper (from Maidu *májdy* [*máydɨ*] 'person') was spoken to the east and south of Lassen Peak, with little documented dialect differentiation. The Chico dialects, for which no traditional name is known, were spoken around present Chico. Their precise genetic status remains uncertain because there is so little information on them. Konkow (from their *kójom k̓áw* 'valley land') was spoken along the lower reaches of the Feather River Canyon and in the Sacramento Valley. Nisenan (from their ablative plural pronoun *nisena·n* 'from (among) us') was spoken to the south in the American River drainage. In 1913 Dixon and Kroeber combined the Maiduan, Wintuan, Yokuts, and Miwok-Costanoan (Utian) families into their core Penutian or California Penutian stock (section 6.3).

Material on Maidu proper includes an early grammar (Dixon 1911), a text collection (Dixon 1912), a later, more reliable text collection with dictionary (Shipley 1963), and a grammar (Shipley 1964). Konkow materials include a grammar (Ultan 1967) and a discussion of sound symbolism (Ultan 1971). For Chico, Gatschet collected a wordlist in 1877. Work with Nisenan, carried out primarily by Hans Jörgen Uldall in the 1920s and 1930s, and by Richard Smith in the 1960s, resulted in a discussion of phonetics (Uldall 1954), phonology (Paul 1967), texts and dictionary (Uldall and Shipley 1966), a text (Smith 1977), and a manuscript grammar and lexicon compiled by Eatough from the texts collected by Smith. Material cited here is Nisenan from the 1991 Eatough manuscript unless otherwise specified. Comparative work can be found in Shipley 1961, Shipley and Smith 1979a,b, 1981, and Ultan 1964. Golla 1980 gives 108 possible Yokuts-Maiduan cognate sets.

The Proto-Maiduan consonant inventory includes plain stops *p*, alveolar *t*, and *k*; voiced implosives *b* and *d*; ejectives *p̓*, *t̓*, *k̓*; *?*; fricatives *s* and *h*; and resonants *m*, *n*, *l*, *w*, and *y*, traditionally written *j*. Reflexes of these consonants appear unaltered in the daughter languages. In addition, Maidu and Konkow contain rarely occurring

palatals *c* and *ć*, stops in the speech of monolinguals, affricates for bilinguals. A six-vowel system is reconstructed with *i*, *e*, *a*, *o*, *u*, and a high central unrounded [*ɨ*], written *y*. Konkow and Nisenan have innovated an additional schwa. Vowel length is predictable in Maidu, where stressed open syllables are automatically lengthened, but distinctive in Konkow and Nisenan. Stress is distinctive in Maidu, falling on either the first or second syllable of the stem, but predictably initial in Konkow and Nisenan (with certain automatic shifts). The relationships of these systems can be seen in some reconstructions by Shipley: Proto-Maiduan **polo* 'buckeye' > Maidu *poló*, Konkow, Nisenan *polo*; Proto-Maiduan **ć̓awa·* 'jaw' > Maidu *ćć̓awá*, Konkow and Nisenan *ć̓awa·*; Proto-Maiduan **k̓o·do* 'land' > Maidu *k̓ódo*, Konkow, Nisenan *k̓o·do*. A rigid CV(·)(C) syllable canon is maintained by regular elision. When morphemes are combined, the second of two successive vowels is elided, as is the second of two syllable-final consonants. There are traces of vowel harmony: Shipley 1956 notes that in Maidu, 40 percent of disyllabic noun and adjective stems show the same vowel. There is also vowel harmony of *i*-initial suffixes across root-final velars: Nisenan *bak̓-i* 'leaf-ACC' > *bak̓a*.

Morphologically the languages are noteworthy for the lack of a formal distinction between noun, verb, adjective, and adverb roots. A root may appear with any semantically compatible suffixes: Maidu *sòli* 'song', *sólk̓an* 'he's singing', *sólpe* 'singing' (attributive), *sólnini* 'singingly' (Shipley 1963: 3).

Substantives include free pronouns and nouns. Among the pronouns, first, second, and third person are distinguished; inclusive and exclusive in first person; and singular, dual, and plural number. The third person pronouns have a transparent origin in the demonstratives. Noun stems may be simple, compound (Nisenan *husku-boono* 'water.snake-design') or derived (*woonti-pe* 'kill-er'). Singular, dual, and plural number are distinguished only on nouns referring to humans in some Maiduan dialects, to animates in others. All substantives bear an obligatory overt case suffix: nominative, accusative, genitive, ablative, locative, allative, comitative, or instrumental.

Noun phrases, which are not obligatory in clauses, may consist of a pronoun or noun alone, a noun preceded by modifiers, or a nominalized clause. Modifying nouns appear in the nominative case, regardless of the case of the head: Nisenan *ne-im sew-di ʔy-daw-mukum* big-NOMINATIVE river-LOCATIVE DIRECTIONAL-come-REMOTE = 'they arrived at a big river'. Numerals, which are classified as substantives, can appear either as modifiers or as heads: *hyyny-im laj-im peen-i* small-NOMINATIVE child-NOMINATIVE two-ACCUSATIVE = '[she left her] two small boys'. Nominalized clauses may contain nouns in a variety of cases: *bic'i-ni wee-ti-to-maa-im* fingernail-INSTRUMENTAL loose-CAUSATIVE-RECIPROCAL-NOMINALIZER-NOMINATIVE= 'a loosening with the fingernails'; *kaantee-im dii-i woo-no-ti-maa-im kan-i* all-NOMINATIVE louse-ACCUSATIVE shake-away-CAUSATIVE-NOMINALIZER-NOMINATIVE end-ACCUSATIVE = 'after his killing all the lice'.

Verb stems may be simple, reduplicated (*jənəsysyjənəsysy* 'wave back and forth'), compound (*paj-toojee* 'foot-take.along' = 'follow tracks'; *pa-daw* 'go-eat') or derived (*ʔem-sip'* 'backing-emerge' = 'have one's back stick out'). Sets of derivational prefixes (like *ʔem-*) in the Maiduan languages resemble the instrumental causative prefixes of languages classified as Hokan in meaning, indicating involvement of particular body parts, kinds of instruments or forces, or types of motions: Nisenan *həp* 'fit into clothing', *ʔin-həp* 'fit into pants', *gen-həp* 'fit into shoes', *by-həp* 'fit into a shirt'; *dat'* 'press in', *ba-dat'* 'hit into ground with rock'; *bus* 'smother', *ju-bus* 'put out fire'. Reduplicative prefixation of the first consonant and vowel of the stem can indicate distributed or repeated action: *t̓a* 'be on', *t̓a-t'a* 'be scattered around on'.

Verbal suffixes include a causative (*sa-ti* burn-CAUSATIVE = 'start a fire'), reciprocal (*japajto-to* talk.with-RECIPROCAL = 'talk with each other'), reflexive (*woo-ʔomis* hit-REFLEXIVE = 'hit oneself'), stative (*ʔe-ʔu* see-STATIVE = 'have in sight'), and a negative (*ʔe-men* see-NEGATIVE = 'not see'). An irrealis suffix often appears with intentions (*moo-men-wis* drink-NEGATIVE-IRREALIS = 'not be going to drink'). Other verbal suffixes indicate impossibility (*huudok'oj-makka* lift-impossible = 'be impossible to lift'), the consequence of a condition (*dani wenne-naa* I good-CONSEQUENTIAL = 'I would be fine'), 'soon', 'try to', 'manage to', 'plan to', 'finish', 'maybe', events with immediate relevance, recent past events, remote or mythic past events, and events or states in progress.

Finite verbs need not be inflected. They may but need not be accompanied in main clauses by an auxiliary, inflected for subject: *pii-jee-wis da-ni* swim-go.along-IRREALIS AUXILIARY-1SG = 'I'll go swimming'. Certain auxiliary verbs are used in questions: *Homo-na ka-ni ʔu-k'oj* where-ALLATIVE AUXILIARY-2SG DIRECTIONAL-go = 'Where are you going?' The auxiliary can appear before, after, or separated from the verb.

Imperatives bear special singular or dual-plural suffixes (*pa* 'eat', *pa-p* 'eat (SINGULAR)!', *pa-kwa* 'eat (DUO-PLURAL)!'). Optatives are inflected to distinguish first person, second person present, second person absent, second person unmarked, and third person subjects. Second person optatives are used for polite requests: *my-jaa-ti-bene-ka* thus-do-CAUSATIVE-OPTATIVE.2SG-ABSENT = 'Why don't you do that (when I'm gone)'. Three numbers are distinguished in first and second persons. Cautionary verbs bear a distinct set of person suffixes: *ʔe-by* see-CAUTIONARY.3 = 'he might see!'

Adverbs are frequently derived from the same roots that appear in nouns or adjectives and verbs: Nisenan *ne* 'a big one, be big, big', *ne-k* 'in a big way, a lot, too much'; *heel* 'a lot, be a lot', *heel-tin* 'generously'. They precede the verbs they modify: *ne-k dii-mukum* big-ADVERBIAL louse-REMOTE = 'he was really lousy, had lots of lice'.

Major constituent order in matrix clauses is quite flexible, but within embedded clauses it is rigidly verb-final. Types of dependent clauses include the nominalized clauses noted above, as well as various kinds of adverbial clauses, marked with

suffixes. A Nisenan suffix *-im* appears with dependent verbs sharing the same subject as a following main clause. A suffix *-san* appears with same-subject dependent verbs specifying a result: 'You got sick [from eating acorn soup].' A suffix *-ć́e* appears with dependent verbs whose subject differs from that of a following indepen-dent clause. A suffix *-won* appears with different-subject purpose clauses: 'I brought it [so you could eat it].' Oswalt (1976a) points out that these suffixes comprise a system similar to the switch-reference systems of other languages in the area.

The passage below is from a Nisenan text told by Mrs Lizzie Enos, of Clipper Gap, to Richard Smith in 1964 or 1965, cited in Eatough. A comparison of the top pairs of lines shows that the phonology is not complex. Examples of nominative, accusative, genitive, instrumental and allative case marking can be seen with nouns. Imperative and optative inflections can be seen in the fourth line. The same-subject (SS) and different-subject (DS) suffixes can be seen on the verbs 'bring', 'feel like shooting', and 'do'. Embedding by nominalization can be seen in the fourth line.

Syy	*toodawin*	*merik*	*syy*	*wokittotihaa*	*kaanteepaji.*
syy-i	*too-daw-in*	*meri-ik*	*syy-i*	*wo-kit'-to-ti-haa*	*kaantee-paj-i*
dog-ACC	carry-come-SS	Mary-GEN	dog-ACC	wo-down-RECIP-CAUS-PAST	all-time-ACC

'Every time he brought his dog, he let it fight with Mary's dog.

Hac'e	*merim*	*kopetani*	*myysyn*	*k'aahaa.*
ha-c'e	*meri-im*	*kopeta-ni*	*myy-sy-in*	*k'aa-haa*
do-DS	Mary-NOM	rifle-INST	shoot-INTEND-SS	follow-PAST

Then Mary felt like shooting it with a rifle.

Hac'e	*mym*	*manaam*	*"Woontimen*	*nik'i*	*syy."*
ha-c'e	mym	manaa-im	woo-no-ti-men-p	nik'i	syy-i
do-DS	that	boy-NOM	shake-away-CAUS-NEG-IMP.SG	1SG.GEN	dog-ACC

Then the boy (said), "Don't kill my dog!"

"Toonop!	*Hamaam*	*mym*	*syy*	*toodawmenbeneka*
too-no-p	ha-maa-im	*mym*	*syy-i*	*too-daw-men-beneka*
carry-away-IMP.SG	do-NOMINALIZER-NOM	that	dog-ACC	carry-come-NEG-OPT.2SG.ABSENT

"Take it away! And having done that, never bring that dog

mym	*syy*	*hedehena*	*ʔama*	*wete!"*
mym	*syy-i*	*hedehe-na*	*ʔama*	*wete*
that	dog-ACCUSATIVE	here-ALLATIVE	again	even

back here again!'"

Molala = Molalla = Molale = Molele*

Molala was spoken in the nineteenth century in north central Oregon, along the western slopes of the Cascades from the upper Rogue River north to the Clackamus River and the Mt. Hood area (Rigsby 1969). In 1908 the Molala joined neighboring groups on a reservation at Grande Ronde, Oregon. The last known speaker of the language, Fred Yelkes, died in 1958. Molala was assumed for some time to be related to Cayuse in a grouping termed Waiilatpuan, but it has since become clear that there is no basis for the grouping. In 1846 Hale published vocabularies he had collected of the two languages, grouping them together as 'Waiilatpu', perhaps because of a remark by the Presbyterian missionary Marcus Whitman that they were mutually intellgible. The grouping was retained in the Powell classification of 1891. Subsequent careful examination of all records of both languages by Rigsby (1966, 1969) and Berman (1996) indicates that the few superficial similarities are due to chance and areal contact. At present a Penutian affiliation is still considered possible, with closest relationships to Klamath and Sahaptian (section 6.3).

Vocabulary, grammatical material, and some texts were collected during the nineteenth century by Hale in 1841 (1846), Gibbs in 1851 (BAE mss 995a-b), and Gatschet in 1877 (BAE mss 998, 1000, 2029). In 1910-11 Frachtenberg recorded substantial material including over 30 texts (BAE ms 2517), although transcription is not always completely reliable, particularly in distinctions of plain and glottalized consonants. Jacobs collected some further material (more reliably) in 1927-30, and Swadesh tape-recorded a wordlist from Mr Yelkes. The only published materials are wordlists from Hale in Gallatin 1848: 97-8, Curtis 1907: 30.8: 195-8, and material from earlier sources for comparison with Cayuse in Rigsby 1966, 1969.

According to Rigsby's analysis of the written materials and the tape-recording made by Swadesh, Molala has plain and ejective stops: *p, t, c, ƛ, k, q; p̓, t̓, c̓, k̓, q̓, ʔ*; fricatives *f, s, ɬ, h*; and resonants *m, n, ŋ, l, w, y*. Consonant gemination is predictable. There is a four-vowel system with distinctive length: *i, i·; e, e·; u, u·; a, a·*. Primary stress is also distinctive.

The verb complex consists of four parts: an initial pronominal object prefix or reflexive, the theme, a tense/aspect suffix (continuative present, future, or one of three pasts), and a final pronominal subject suffix. Third person objects are not overtly represented in the morphology. There are several sets of subject suffixes, whose occurrence depends on the preceding tense/aspect suffix. The differences can be seen by comparing forms in the paradigms below from Frachtenberg cited in Rigsby 1969: 86. The first set of verbs is based on the theme *tpá-* 'hear' followed by remote past *-s*. The second set is based on the theme *pƛ́-* 'sleep' followed by continuative present *-ʔs*.

tpásik	'I heard him'	*ʔína plíʔsk*	'I am sleeping'
tpásin	'thou heardst him'	*kí· plíʔsa*	'thou art sleeping'
tpási	'he heard him'	*ní· plíʔst*	'he is sleeping'
tpásyanik	'we heard him'		
tpásyanin	'you heard him'		
tpásyani	'they heard him'		

Uninflected verbs may be nominalized with a suffix *-sint*: *pé-sint* 'food, eating' (*pé* 'eat'); *hestkú-sint* 'war'.

The verbs based on 'sleep' are accompanied above by independent pronouns in addition to the subjective suffixes. According to Frachtenberg's description, the independent pronouns distinguish agent, patient, and possessive case, three persons and in some forms, three numbers. A possessive set is based on the patient forms.

AGENTS	*ʔína*	'I'	*kíms*	'we two'	*kímt*	'we'
	kí·	'thou'	*kíms*	'you two'	*kímt*	'you'
	ní·p	'he'	*níms*	'they two'	*nímt*	'they'
PATIENTS	*ʔínc*	'me'	*qánc*	'us two'	*qánc*	'us'
	ʔíms	'thee'	*qáms*	'you two'	*qáms*	'you'
	pínc	'him'	*níms*	'them two'	*nímt*	'them'

POSS	*ʔínaŋ*	'mine'	*qánaŋ*	'ours'	(DUAL, PLURAL)
	ʔímaŋ	'thine'	*qámaŋ*	'yours'	(DUAL, PLURAL)
	pínaŋ	'his'	*qánha, qáwam*	'theirs'	(DUAL, PLURAL)

Possession on nouns is indicated by pronominal suffixes with the same forms as the stems of the patient pronouns: *pé·ne-ʔin* 'my daughter', *klíwa·t-ʔin* 'my shoulder'.

-ʔin	'my'	*-qan*	'our'	(DUAL, PLURAL)
-ʔim	'thy'	*-qam*	'your'	(DUAL, PLURAL)
-pin	'his'			

Rigsby points out that these pronominal stems resemble not only their counterparts in Cayuse, but also his reconstruction of the Proto-Sahaptian independent nominative pronouns: **ʔí·n* 'I', **ʔí·m* 'thou', **ʔipí* 'he', **néwe/néme* 'we' (where *-we* or *-me* is a plural suffix). He notes that the most likely explanation for the similarities is borrowing, since the languages were in such close contact.

MUSKOGEAN = MUSKHOGEAN FAMILY

WESTERN
- **Choctaw-Chickasaw**

CENTRAL
- **Alabama = Alibamu**
- **Koasati = Coushatta**
- **Apalachee = Apalachi***
- **Hitchiti, Mikasuki = Miccosukee**

EASTERN
- **Creek = Muskogee = Maskoke, Seminole**

Muskogean people were first encountered by DeSoto in 1539, when they lived entirely within the Southeast in what became South Carolina, Tennessee, Kentucky, Mississippi, Alabama, Georgia, Florida, and Louisiana. Most were forced to move west during the Great Indian Removal of 1836-40.

There are now at least three main dialect groups of Choctaw (Ulrich 1986: 2): the Native Choctaws living in the Choctaw Nation in southeastern Oklahoma, the Mississippi Choctaws of Oklahoma living in the Chickasaw Nation of south central Oklahoma around Durwood, and the Choctaws of Mississippi, near Philadelphia, Mississippi. Nicklas mentions an additional community near Talahassee, Florida, and Munro 1987a notes that some speakers live among the Koasati in Louisiana. There are perhaps 11,000 Choctaw speakers, and children are still learning the language (Aaron Broadwell and Dale Nicklas p.c. 1992). Chickasaw is spoken in Oklahoma by under 1000 people, most over 40 (Munro & Wilmond 1987). It is considered a dialect of Choctaw, but the political division between the two groups is old (Pulte 1975). Pulte & Munro 1987 describe the extensive phonological, morphological, and lexical differences between them. Jacob 1980 reports that after a short period of exposure, native speakers of each can understand the other.

Alabama and Koasati are closely related but not mutually intelligible languages, although some Alabama speakers also know Koasati. Alabama is spoken by about 300 on the Alabama-Coushatta reservation near Livingston, Texas, 90 miles northeast of Houston. Lupardus reported that in the mid-1970s many preschool children spoke the language, but that television was likely to change the situation (1982: 3). Koasati is spoken by about 350 people of all ages in southwestern Louisiana around Elton, and by fewer than 50 around the Alabama-Coushatta reservation (Kimball 1991: 1). Ulrich notes that Texas speakers prefer the name 'Coushatta', and Louisiana speakers 'Koasati' (1986: 22). Apalachee, formerly spoken in northern Florida and southern Georgia, probably disappeared early in the 18th century. It is known only from a letter written in 1688 to Charles II of Spain with Spanish translation.

Hitchiti and Mikasuki are close dialects. Perhaps two Hitchiti speakers remain in the Seminole Nation. Mikasuki, by contrast, is still spoken by between 1000 and 2000, including children. It is used by most Seminole and nearly all members of the Miccosukee Tribe in Florida (Jack Martin p.c. 1997).

The Creek or Muskogee language (from *ma·sko·ki*, the Creek name for themselves (Haas 1976: 577)), was the dominant language of the Creek Confederacy numerically and politically. Many speakers of other Southeastern languages were bilingual in Creek. Among the dialects is Seminole. The term 'Seminole' actually refers to a political unit that originated in the mid-18th century when Creeks and Hitchitis left the Creek Confederacy and moved south into Florida. The name comes from Creek *simaló·ni* or *simanó·li*, borrowed from Spanish *cimarrón* 'wild one', for those living in the wild territory of Florida (Boynton 1982: 4 citing Fairbanks 1973: 6). The Seminole Indians of Florida consist of two linguistic groups, the majority speaking Mikasuki, the others a dialect of Creek. Some Seminoles were moved to Oklahoma in the 1830s. Jack Martin estimates that Creek speakers, including some children, now number between 4000 and 5000 (p.c. 1997).

Genetic relationships among the Muskogean languages were recognized early in work by Barton (1797: lxviii), Gallatin (1836: 94-9), and Gatschet (1884). The four subgroups, Choctaw-Chickasaw, Alabama-Koasati-Apalachee, Hitchiti-Mikasuki, and Creek-Seminole, have been clear since Gatschet 1884, but higher-level subgrouping is problematic, due to crosscutting resemblances, many from borrowing. The first careful historical work is Haas 1941b, in which a Western branch, consisting of Choctaw-Chickasaw, is distinguished from an Eastern branch, consisting of all others. Following work by Swanton, Munro 1987b proposes an alternative division into a Southern branch (Choctaw-Chickasaw, Alabama, Koasati, Apalachee, and Hitchiti-Mikasuki) versus a Northern branch, (Creek-Seminole). Kimball (p.c. 1989) proposes a three-way split: Western (Chickasaw-Choctaw), Central (Alabama-Koasati, Apalachee-Mikasuki-Hitchiti), and Eastern (Creek-Seminole). Subgrouping is discussed in Crawford 1975, Booker 1980, Munro 1987b, 1993, Booker 1988, Martin 1991 and others. Comparative work is in Haas 1941b, 1945, 1946a, 1947a, 1949, 1950a, 1966, 1969b, and 1977. Extensive reconstruction of the Proto-Muskogean verb is in Booker 1980. The Muskogean family has been linked with isolates of the area, Natchez, Tunica, Chitimacha, and Atakapa in a hypothesized Gulf stock, but relationships are not considered demonstrated (Brinton 1873, Swanton 1907, 1924, Haas 1951, 1952). Links with the little-attested Guale and Yamasee have proven spurious (Sturtevant 1996).

There are several excellent overviews of languages of the Muskogean family and the Southeast, in particular Haas 1973a, 1979a, Crawford 1975, Booker 1980, and Kimball 1993a. Bibliographies are in Pilling 1889 and especially Booker 1991a.

The earliest good published sources are on Choctaw: an 1870 grammar and 1915 dictionary by the missionary Cyrus Byington, and vocabularies in Byington 1852, Wright 1880, and Watkins 1892, all in an orthography developed by Byington. More recent Choctaw grammars include Nicklas 1974, 1979, and Jacob, Nicklas, & Spencer 1977. Discussion of phonology and morphology are in Nicklas 1975, Heath 1977a, 1980, Munro & Ulrich 1984, Munro 1985, Ulrich 1986, 1988, Broadwell 1990, Lombardi & McCarthy 1991, Hammond 1993 and Ulrich 1993, 1994. Chickasaw dictionaries are in Humes & Humes 1973 and Munro & Willmond 1994. McClaran & Herrod 1977 describes discourse markers, Munro 1984a auxiliaries, and Broadwell 1991 evidentials. Lexical categories are discussed in Haag 1996, case in Heath 1975, Davies 1981, 1986, Munro & Gordon 1982, Payne 1982, Munro 1984b, and Jelinek 1988, comitatives in Munro 1983a and relativization and switch-reference in Munro 1983b, Davies 1984, 1998, and Gordon 1987. Williams 1995 describes obsolescence with detailed discussion of structural changes in Oklahoma Choctaw.

Early work on Alabama by Gatschet and Swanton remains in manuscript form in the NAA. Rand 1968 contains a preliminary phonology, Lupardus 1982 a grammatical sketch, and Sylestine, Hardy, & Montler 1993 a full dictionary. Additional in-depth work on Alabama deals with ablaut (Hardy & Montler 1988a,b), the phonology of negation (Montler & Hardy 1991), nominal marking (Davis & Hardy 1984, 1988), comparatives (Hardy & Davis 1988), agent prefixes (Montler & Hardy 1990), and middle voice (Hardy & Montler 1991). Koasati is beautifully documented in a 1991 grammar and 1994 dictionary by Kimball. Distinctions between men's and women's speech in Koasati have been discussed in Haas 1944, Kimball 1987a, 1990, and Saville-Troike 1988. Additional work on Koasati is in Kimball 1983, 1984, 1988a, and 1993b. The only known primary source on Apalachee is the 1688 letter to Charles II of Spain, available in facsimile in Smith 1860 ms, although Gatschet 1884: 76 reported additional Apalachee material in archives in Havana. Working from an interlinear translation of the letter made by Swadesh, Haas (1949) established that the language belonged to the Alabama-Koasati branch of the family. Based on his knowledge of Koasati, Kimball confirmed the judgment of Haas 1949 and assembled a grammatical sketch (1987b) and vocabulary (1988b).

Relatively little work is available on Hitchiti. Gatschet 1888 contains a sketch with annotated text, and work by Haas includes Hitchiti forms from her fieldwork. Sturtevant 1954 and 1955 contain much vocabulary and 1962 discusses loans. West 1961 and 1974a describe the phonology of Mikasuki and West 1974b and c verb morphology. Derrick-Mescua 1980 gives a detailed discussion of Mikasuki phonology with a brief morphological sketch, and Boynton 1982 a fuller grammatical sketch.

Early documentation of Creek is in a grammar in Buckner & Herrod 1860 and in Gatschet 1884 and 1888. Extensive work on Creek by Haas deals with phonology (1938, 1940, 1950a, 1977a,b), etymology (1941c), dialectology (1945), classificatory

verbs (1941a, 1948a), and the development of inflection from auxiliaries (1977c). Hardy 1988 describes Creek morphosyntax, Martin 1991a,b case and causatives, and Hardy 1994 the development of middle voice.

The phonological inventories of the Muskogean languages are relatively simple. Consonants are *p, t, č, k, f, ł, s, h, m, n, l, w,* and *y*. A Proto-Muskogean **kʷ* appears as *b* in all of the languages except Creek, where it is *k* in some contexts, *p* in others (Haas 1947a). Choctaw and Chickasaw contrast *s* and *š*. There are vowels *i, a,* and *o*, with contrastive length and nasalization. Creek has developed another vowel *e* from **ay*. Lengthening is discussed in Haas 1941c, 1950a, Martin 1987, and Munro & Ulrich 1984. There is both lexical and grammatical pitch accent, but the modern systems vary across the languages in complex ways (Booker 1991b) affected by syllable structure, morphological boundaries, and other factors. Discussions of pitch accent are in Haas 1977a, Hayes 1985, Munro 1985, Jackson 1987, and Tyhurst 1987.

Contributing to the lengthening, nasalization, and pitch accent is a complex system of ablaut within the verb (Haas 1938, 1940, Nicklas 1972, 1975, Booker 1980, Heath 1980, Ulrich 1986, 1987a,b, Cline 1987, 1988, Hardy & Montler 1988b, and the grammars). The shape of the verb stem is altered depending especially on aspect and sometimes tense or modality. Some shape changes or ablaut grades are triggered by particular affixes; in other cases, the choice of grade alone is semantic. Shape changes involve infixation (*-n-, -h-, -hn-, -y-*), lengthening, and pitch change. In a discussion of ablaut in Proto-Muskogean, Booker (1980: 90) cites Choctaw examples from Nicklas 1974: 72-96: the verb root *takci* 'tie' appears as *tákci* in the lengthened grade, as *tą́·kci* in the incompletive, as *tahákci* in the instantaneous, as *tahą́·kci* in the iterative, and as *táyyakci* in the intensive. The root *pisa* 'to look' appears in lengthened grade in *pisá·li ca iyali tok* 'I looked at it and left', in the incompletive in *pį́·sali tok* 'I was looking at it', in the instantaneous in *píhsa* 'to glance', in the iterative in *pihį́·sali tok* 'I saw it again and again', and in the intensive in *píyyi·sali tok* 'I gazed at it'. (The suffix *-li* is 'I', *tok* recent past.)

Nouns in most languages bear lexical accent. (Unattributed examples are Mikasuki from Boynton 1982.) They may be based on a single root (Mikasuki *àsp-ī* 'corn-CITATION.MARKER' = 'corn'), they may be compound (*àsp-ì-hálb-ī* 'corn-CITATION.MARKER-skin-CITATION.MARKER' = 'cornflakes', *sòk-ì-hàlb-kàfáhb-ī* 'pig-CIT-skin-rough' = 'armadillo'), or they may be derived from verbs (*anc-ik* 'wear-NOMINALIZER' = 'clothes'). Various other derivational suffixes appear as well (*i·f-o·c-i* 'dog-DIMINUTIVE-CITATION.MARKER' = 'puppy'). Nouns are not obligatorily inflected for gender or number, although in some Muskogean languages nouns referring to animates may be marked as collective. Number is marked by suppletion or affixation on verbs of location and a few others. Nouns do bear case suffixes distinguishing nominatives from obliques. Interesting discussion of the markers is in Davis & Hardy 1984 and

1988. Boynton 1982: 56-8 gives examples of nominal case marking in Mikasuki.

cokf-o<u>t</u> *ca-hi·c-om*
rabbit-<u>NOMINATIVE</u> 1PATIENT-see-AUXILIARY
'A rabbit sees me.'

i·f-o<u>n</u> *nakn-o<u>n</u>* *lok-s-im-i·l-om*
dog-<u>OBLIQUE</u> man-<u>OBLIQUE</u> LOCATIVE-INSTRUMENTAL-3DATIVE-come-AUXILIARY
'He brought the dog to the man' (from West 1974: 5)

ok-o<u>n</u> *s-il-oksah-l-om*
water-<u>OBLIQUE</u> INSTRUMENTAL-REFLEXIVE-wash-TRANSITIVE-AUXILIARY
'She washed with water.'

in-coko·l-i·k-o<u>n</u> *o·ł-ik.*
3ALIENABLE.POSSESSOR-sit-NOMINALIZER-<u>OBLIQUE</u> go-SAME.SUBJECT
'Go to her house.'

Nouns may contain pronominal prefixes referring to possessors, like the prefix *in-* above in '<u>her</u> house'. Prefixes resembling those referring to patients in verbs are used for inalienable possession, such as body parts or kin relations. Prefixes used for datives in verbs indicate alienable possession, as in 'her house'. A few nouns appear with both sets: *a<u>c</u>-akni* '<u>my</u> body' (inalienable), *a<u>m</u>-akni* '<u>my</u> meat' (alienable). Finally, clitics in some languages indicate emphasis, contrast, focus and topic.

Verb morphology is elaborate and variable across the languages. Several features are of special interest. A number of verb roots show suppletive forms for different numbers of absolutive participants: Mikasuki *łini·k-* 'one to run', *pala·k-* 'several to run', *mata·k-* 'many to run'. Verbs contain pronominal affixes referring to their core arguments: agents, patients, and datives. There are forms for first and second person agents and patients but not third. Agent suffixes can be seen in Mikasuki *ko·slom-<u>li</u>* '<u>I</u> cut', *ko·slom-<u>icka</u>* '<u>you</u> cut', *ko·slom* 'cut', *ko·slom-<u>i</u>·<u>ka</u>* 'we (incl) cut', *ko·slom-<u>o</u>·* 'we (excl) cut', *ko·slom-<u>acka</u>* 'you all cut'. Patient prefixes can be seen in *<u>ac</u>-a·fąckosom* '<u>I</u>'m very happy', *<u>ipo</u>-·ifąckosom* '<u>we</u>'re very happy', *<u>ci</u>-·fąckosom* '<u>you</u>'re very happy', *a·fąckosom* 'is/are very happy'. Both can be seen in *<u>ci</u>-hihǫ·com-<u>li</u>* '<u>I</u> see <u>you</u> all'. Dative prefixes are in *<u>an</u>-kabą·lon* '<u>I</u>'m cold', *<u>an</u>-tako·slom* 'she's cutting it <u>for me</u>'. Most verbs are lexicalized with particular sets, but some verbs in some languages allow a choice: Mikasuki *no·cipa·-<u>li</u>* '<u>I</u> am going to sleep', *<u>ca</u>-no·ci·pom* '<u>I</u> am sleepy'. Some patient/dative alternations contrast inherent characteristics with temporary conditions: Choctaw patient in *<u>si</u>-acokma* '<u>I</u> am good',

dative *am-acokma* 'I am well, I like it' (Jacob, Nicklas, & Spencer 1977: 140-1). A discussion of pronominal case in Choctaw and Chickasaw is in Munro & Gordon 1982. Additional work is in Heath 1980, Davies 1981, 1986, and the grammars.

Other verbal prefixes, some traceable to earlier incorporated noun or verb roots, function as locatives, instrumentals, and comitatives: Mikasuki *i·h-ka·-ała·l-ik* 'here-into.water-go-SAME.SUBJECT' = 'it went into the water (and splashed me)', *acak-i··l-om* 'with-come-AUX' = 'come with me'. Some serve as applicatives, yielding a transitive verb with a place, instrument, or companion as object, as in 'She washed-with water' cited earlier. Aspect is reconstructed for Proto-Muskogean but not tense, although some languages have developed elaborate tense distinctions (Booker 1980). An interesting development is the fusion of what were once auxiliaries to the main verb as inflectional affixes (Haas 1946a, 1956, 1969b, 1977c). One result of this development and subsequent reanalysis is that pronominal affixes do not all appear in the same location in the verb morphology, either within or across the languages. They are sometimes prefixes, sometimes infixes, sometimes suffixes.

Basic constituent order is SOV, although constituents may appear to the left or the right of the nuclear clause for discourse purposes. When clauses are combined, switch-reference suffixes appear whose shapes are similar to those of the nominative and oblique case suffixes on nouns, visible in the passage below.

The passage is from a Mikasuki tale presented in Boynton 1982: 181-2. Here nominal case suffixes *-ot* and *-on* can be seen on 'tree', a patient pronoun *ca-* in 'die', the topic marker *-ika* on 'jaguar' and 'right now', switch-reference suffixes (ss same subject, DS different subject) on 'then', 'push', 'got tired', 'talked', 'die', and 'fall'. The SOV order can be seen in the first line.

ałiy-omi-ta-wa	*ma·hi-h-in*	*koway-co·b-wakacb-ika*	*ah-on*	*tapaka-··c-ay-ik*
leave-AUX-PAST-INFR	do-PAST-DS	horse-big-spotted-TOP	tree-OBL	push-CAUS-EM-SS
he left	then	jaguar	tree	push

'(The possum) went off. And then, the jaguar was pushing against the tree.

i-wan-i·p-ik	*apo·n-onka-k-it*
3DATIVE-tire-COMPLETIVE-SAME.SUBJECT	talk-AUXILIARY-FOCUS-SAME.SUBJECT
got tired	talked

The jaguar got tired and said,

"himay-ay-ika	*ca-··l-ip-a·-mi-s*	*ah-ot*	*cilafk-i·p-ik*	*ałiy-om-ti"*
NOW-EM-TOP	1PAT-die-COMP-FUT-1.AUX-INDIC	tree-NOM	fall-COMP-DS	go-AUX-EMPH
right now	I'm going to die	tree	fall	begin

"Now, I'm going to die because this tree is falling down.'"

Natchez*

The Natchez were first described by Europeans in accounts of La Salle's expedition of 1682, when they occupied towns south and east of present Natchez, Mississippi. The French admired their complex culture, which included a theocratic government and caste system, apparently accompanied by multiple speech registers. Wars with the French seriously depleted the tribe by 1731, however. Most survivors were sold into slavery, then took refuge among the Cherokee, Creek, and Chickasaw. Many moved with their hosts into Oklahoma during the 1836 removal (Crawford 1975: 63-4). The last two known speakers, Watt Sam and Nancy Raven, died in the late 1930s.

The language has no close relatives. A remote relationship with Atakapa, Chitimacha, Tunica, and the Muskogean languages has been hypothesized, a grouping termed 'Gulf'. Haas 1973a remarks that the relationship would be considerably more distant than that among the Algonquian, Wiyot, and Yurok languages.

An excellent bibliography of work on Natchez is in Booker 1991. Good overviews are in Crawford 1975, and Haas 1973a, 1979a. Some Natchez words appear in early French documents, and four wordlists were recorded during the 19th century, by Gallatin (1836), by General Albert Pike about 1861, by Mrs. A.E.W. Robertson in 1873 (Brinton 1873), and by Gatschet in 1885. All are reprinted in Van Tuyl 1979. In 1907, 1908, and 1915 Swanton collected lexical, grammatical, and textual material in Oklahoma from five of the last speakers, and in 1934 and 1936, Haas collected much more from the remaining two, Watt Sam and Nancy Raven. The Haas material is most reliable. Forms cited here are from her 1975 manuscript sketch.

A connection between Natchez and Creek was first suggested by Bartram in 1791. Major published works further exploring the relationship of Natchez to Muskogean languages include Brinton 1873, Swanton 1907, 1924 (with Natchez grammatical sketch), and Haas 1951, 1952, 1956, 1958b. Haas 1956 contains a phonology and Haas & Kimball forthcoming a grammatical sketch. Haas has also discussed clan names and kinship terms (1939a), the auxiliary system (1977, 1979b), and noun incorporation (1982).

The structure of Natchez matches that of surrounding languages. Consonants include plain stops *p*, *t*, *c*, *k*, *k*^{w}, and *ʔ*; fricatives *š* and *h*; voiced sonorants *m*, *n*, *l*, *w*, and *y*; and voiceless sonorants *M*, *N*, *L*, *W*, and *Y*. There are five basic vowels, *i*, *e*, *a*, *o*, and *u*. Mr. Watt's speech contained an additional vowel *ö*, of secondary origin. All appear both long and short. There is vowel contraction and harmony: a large proportion of stems contain the same vowel throughout. Regressive harmony is optional, but progressive harmony is obligatory. Its effect is visible, for example, in adjectival suffixes: *ʔiwit-ip* 'pregnant', *lal-ʔap* 'hard', *coh-op* 'dried', *meyek-up* 'dark'. Stress is penultimate if that vowel is long, antepenultimate otherwise.

Noun stems may consist of a single root (*hi·* 'squirrel') or be compound (*wi·-hi·* 'ground-squirrel', *ʔa·t-talu·ʔiš* 'foot-many' = 'centipede'). Derivational suffixes include an augmentative (*ʔiLšo·-ši·L* 'rabbit-AUGMENTATIVE' = 'sheep') and diminutives (*ʔu-yi·nuh* 'road-DIMINUTIVE' = 'trail, path'). Some verb roots are used as nouns: *hahkʷal(-ʔiš)* 'give birth, child'. Infinitives are also used as nouns: *pe·lhal-ʔiš* 'to sweep' = 'broom'.

Noun stems may be followed by several kinds of suffixes. Possessive suffixes distinguish three persons: *ʔahal* 'arm', *ʔahal-niš* 'my arm', *ʔahal-piš* 'your arm', *ʔahal-ʔiš* 'his/her arm'. If possessed nouns refer to deceased relatives, a decessive suffix follows, then a definite article: *wa·ti-ha ʔiNkʷal-ʔiš-i·-ya* 'Watt-the mother-his-former-the' = 'Watt's late mother'. Nouns are also inflected for case: ergative/instrumental *-(yi)c*, (absolutive *-Ø*), comitative *-ʔa*, allative *-ku·š*, or locative *-k*.

Some verbs are inflected directly, such as 'drink': *tahkuša·ⁿ* 'I am drinking', *panahkuša·ⁿ* 'you are drinking', *nahkuša·ⁿ* 's/he is drinking'. Others are followed by an auxiliary that carries the inflection: *cak-tala·ⁿ* 'I am sticking him', *cak-panala·ⁿ* 'you are sticking him', *cak-nala·ⁿ* 's/he is sticking him'. Haas found 40-50 auxiliaries that indicate such features as intransitivity, transitivity, causation, and involuntary action. Singular, dual, and plural number are distinguished in all persons: *tahkuša·ⁿ* 'I am drinking', *tatanihkuša·ⁿ* 'we two are drinking', *tapihkuša·ⁿ* 'we all are drinking'. Tense and mode prefixes sometimes fuse with pronominal prefixes: present *tahkusa·ⁿ* 'I am drinking', *panahkuša·ⁿ* 'you are drinking'; past *yahkuša·ⁿ* 'I was drinking', *puhkuša·ⁿ* 'you were drinking'; optative *ʔahkušiⁿ* 'may I drink', *pa·hkuša·ⁿ* 'may you drink'. Remote past is marked by the prefix *ka·-* on a past tense verb (*ka·-yahkuša·ⁿ* 'I was drinking'), and future by the prefix *ma·-* on an optative (*ma·-ʔahkuša·ⁿ* 'I will drink'). An inabilitative is formed with the prefix *iš-* on a present tense verb (*iš-tahkušiⁿ* 'I can't drink'). Suffixes *-k* and *-ne* form dependent verbs (*tahkuši-k* 'I drinking', *yahkuši-k* 'I having been drinking'). They link an event to another without necessarily subordinating it. Infinitives are formed with the indefinite subject prefix *ha-* and suffix *-ʔiš* (*hahkuši?iš* 'to drink'). Sentences end with nasalization (ⁿ).

Roots can show ablaut or change in shape with different inflections. The normal grade form of 'drink' appears in infinitives, for example (*hahkuši?iš* '(for one) to drink'), but the reduced grade in participles (*ʔihkuši* 'drinking').

Agent, patient, and dative/beneficiary case are distinguished in the pronominal affixes on verbs. Agent prefixes can be seen with 'drink' above. Both agents and patients appear in *cak-nanila·ⁿ* 's/he is sticking me', *cak-napila·ⁿ* 's/he is sticking you', *cak-nala·ⁿ* 's/he is sticking (him or her)'. The addition of *-š-* to the patient pronouns yields datives: *neš-na·ca·ⁿ* 'it is impossible for me' = 'I am unable' (*t + š > c*), *neš-na·pša·ⁿ* 'you are unable', *neš-na·ša·ⁿ* 's/he is unable'. An applicative adds the meaning 'to, for, from': *hahku-ʔiš* 'to drink', *hahku-ši-ʔiš* 'to drink for, drink from'.

There is also a reflexive: *cak-hal-ʔiš* 'to stick him', *cak-ha-hša-l-ʔiš* 'to stick oneself'.

Many verb roots carry number distinctions as part of their meaning: *h-ahti-ʔiš* 'one to go', *h-akši-ʔiš* 'two to go', *we·-haki-ʔiš* 'many to go'. Number is also indicated by complex phonologically defined alternations in the stem: *cak-hal-ʔiš* 'one to stick one', *caka-hal-ʔiš* 'several to stick one', *caka·ha·-hal-ʔiš* 'one to stick several', and *çakçak-hal-ʔiš* 'one to stick many times'. Verbs can contain diminutive markers: *heyahku-ʔiš* 'one to find one', *he-li-yahku-ʔiš* 'one to find a little one'; *heci-ʔiš* 'one to sit', *he-ti-ci-ʔiš* 'a little one to sit'.

Some noun stems may be used as verbs: *ʔic* 'blood', *ʔic-ha·-ʔiš* 'to bleed' (*-ha·-* copular auxiliary). There is some noun incorporation: *ʔeN-cak-hal-ʔiš* 'fish-stick-AUXILIARY-INFINITIVE' = 'to spear fish', *ʔu·-ʔeL-haL-ši-ʔiš* 'road-watch-AUX-BENEFACTIVE-INFINITIVE' = 'to watch the road for' = 'to look for (someone)' (Haas 1982). Basic constituent order is SOV, although other orders are used for pragmatic purposes.

Many of these features can be seen in the lines below from a text told by Watt Sam to Mary Haas in 1934.

kaWkup-a haw-a-ʔa· ka·-ʔu·-toytoy-ši-htahnu potkop ʔaNkʷah
Fox-the crawfish-the-COM REMOTE-road-race-QUOT-RECIP.AUX mountain seven
'The fox and the crawfish ran a race [over] seven mountains [and]

kaWkup-a kʷaL-ši-šku-·Nkeⁿ ši-šahku-k
Fox-the run-QUOTATIVE-AUX-CONTINUATIVE QUOTATIVE-3PAST.arrive-DEPENDENT
the fox kept running [till] he got there [and]

ka-kitip-šu-ci-ne ʔiši-ya-k nok ma· pac-i-kiⁿ.
DIRECTIONAL-turn.around-QUOT-AUX-when tail-the-LOC can now hang-3PAST-AUX
when he turned around, [the crawfish] hung on his tail;

ma·-ʔaya ka-kitip-šu-ci-ne
FUTURE-3take DIRECTIONAL-turn.around-QUOTATIVE-AUX-when
he took him off [and] when he turned around again [the crawfish] said,

"ya·-k t-aki-·šina-k ka·-hi-y-ow-aⁿ"
this-LOCATIVE 1PRESENT-do-ABILITATIVE-DEPENDENT REMOTE-say-1PAST-AUX-PROG
"This is the way I told you I could do",

ka·-ka-hi-š-u-ⁿ ʔi·ma·wah-a-štik.
REMOTE-DIRECTIONAL-say-QUOTATIVE-AUX-INDICATIVE back-the-toward
he said from behind.'

PALAIHNIHAN FAMILY

Achumawi = Achomawi = Pit River: *Upriver dialects (Hammawi, Qosalektawi = Kosalektawi, Hewisedawi, Astariwawi, Atwamsini); Downriver dialects (Ajumawi = Fall River, Ilmawi, Itsatawi, Madesiwi)*

Atsugewi*: *Atsuge = Atsukeyi = Hat Creek = Pine tree, Apwaruge = Apwarukeyi = Dixie Valley = Juniper*

Achumawi and Atsugewi are mutually unintelligible languages of northeastern California (Olmsted 1954). Achumawi is still spoken, but there have been no known speakers of Atsugewi since 1988.

The term Palaihnih, probably coined by Hale in 1846 from the Klamath *p̓laikni* 'mountaineers', was incorporated into Powell's 1891 classification as Palaihnihan. In 1905, at a time when little data were available, Dixon proposed that Achumawi and Atsugewi be combined with Shasta to form a larger Shasta-Achumawi family. Dixon & Kroeber included this Shastan family in their Hokan stock (1913b). In 1929 Sapir suggested that Shasta-Achumawi, Chimariko, and Karuk might constitute a Northern Hokan subgroup, but evidence for a special relationship is not considered compelling. On the basis of additional data, Bright (1954) and Olmsted (1956, 1957, 1959, 1964, 1965) conclude that while Achumawi and Atsugewi do form a demonstrable family, they are no closer to Shasta than to any other hypothesized Hokan languages.

Major published sources of Achumawi include de Angulo 1930, Uldall 1932, Olmsted 1966, 1977, and Bauman, Miles, & Leaf 1979. Sources for Atsugewi include Olmsted 1958, 1961, 1984, Talmy 1972, 1985, and Walters 1977.

Both languages exhibit the large repertoires of consonants typical of many California languages. There are bilabial, alveolar, palatal, velar, and uvular stops in three series: plain, aspirated, and glottalized. Continuants *s, m, n, l,* (Atsugewi *r*), *w*, and *y* appear both plain and glottalized. All sounds except *ʔ* may be long or short. Long (geminate) stops such as *k·* contrast with double stops such as *kk*, which contain an internal release, although the distinction is not represented in all transcription. Achumawi has distinctive tone while Atsugewi has only stress. In Achumawi every syllable has high or low, level tone: *lám* 'I will eat' versus *làm* 'ice' (de Angulo 1930: 80); *sínùwámmá* 'I stole' versus *sínùwàmmá* 'I got plenty to eat' (Uldall 1933: 77). In Atsugewi each word has one primary stress, with secondary stress on alternating syllables. Primary stress generally appears on the first heavy syllable after the initial one: *sm̀a·sp̓áq̓ʰpu·ma* 'I stepped into a deep mud-hole' versus *stusp̓aq̓íw* 'I stuck my hand into the mud' (Talmy 1972: 443, 444).

The grammars of the two languages are similar structurally to other California languages grouped as Hokan. Noun morphology is relatively simple. Noun roots may stand alone. There are no gender or number markers, but there are oblique case enclitics: possessive, instrumental, comitative, and various locatives. A prefix *qa-* in Achumawi and *c-* in Atsugewi may set off nominals but does not distinguish definiteness. A topicalizing suffix, Achumawi *-kà* Atsugewi *-pa*, can emphasize agent nouns.

Verb morphology is rich and complex. Verb roots appear in different grades in different inflectional contexts, reminiscent of Indo-European. The grades are distinguished by changes of quantity, quality, and in Achumawi, tone: Achumawi *-ám·-* (normal), *-q·m-* (amplified), *-am-* (collapsed) 'eat' (de Angulo 1930: 92). While many roots have meanings typical of verbs crosslinguistically, like Atsugewi *-ye·c-* 'sing' (Walters 1977: 148), some verbs of motion and manipulation have meanings that include an implication of the kind of substance involved, like *-swal-* 'for limp material suspended by one end to move/be located' (Talmy 1985: 73).

There are large inventories of verbal prefixes and suffixes. Pairs of inflectional prefixes and suffixes distinguish person and mode/tense combinations. First, second, and third persons are specified. Inclusive and exclusive first person are distinguished. Singular, dual, and plural number are distinguished in first and second person. Achumawi has two third persons, one basic 'he/she/it/they', the other indefinite 'one'. The Achumawi indefinite pronoun is cognate with the Atsugewi basic third person pronoun. In Atsugewi, two third persons are differentiated in transitives. Tense/mode categories have been described in various ways. For Achumawi, de Angulo (1930: 97) includes indicative, present volitional, future volitional, subordinate, and optative.

Some prefixes specify evidentiality, indicating hearsay, inference, or general knowledge. Both languages contain a large number of causative-instrumental prefixes, perhaps two to three dozen. Some of these indicate causation by natural forces, such as Atsugewi *ca-* 'from the wind blowing' or *miw-* 'from heat or fire'. Others mark kinds of motion involving instruments, such as *uh-* 'by pounding, chopping, batting' or *ru-* 'by dragging, suspending, etc.'. Some indicate kinds of bodily actions such as *ma-* 'by kicking, stepping' or *pri-* 'by sucking, swallowing'. Others involve sensations, such as *sa-* 'by seeing' or *ka-* 'by hearing'. The languages contain perhaps 50 suffixes. Among these are locative/directional markers, such as Atsugewi *-ik·* 'hither', *-it* 'into liquid', or *-ik̓s* 'horizontally into or onto an object above the ground, e.g. the side of a tree trunk'; adverbials like *-iwt* 'almost' or a diminutive *-inkiy*; and others altering argument structure, such as a reflexive, a reciprocal, a causative, and a benefactive (Talmy 1985). The Atsugewi verb *mphol·úpʰmik·a* 'you spat your candy-ball into his face' consists of the morphemes *mw-* first element of the 2/3.FACTUAL.MOOD inflection, *-phu-* 'egressively from the mouth', *-lup-* 'for a small, shiny, spherical object to move or be located', *-mik·-* 'into the face', and *-ᵃ* second element of the 2/3.FACTUAL.MOOD inflection, yielding literally 'you caused a small shiny spherical object to move into his face by acting on it with your mouth egressively' (Talmy 1985: 109).

Nominalization of verbs serves frequently as a word-formation device and as a basis

for various clefted constructions. Some nominalizations are participial, like Achumawi *ùpt-é* 'going'. Such participles may contain adverbial suffixes, like *ìdù'tìsádàng-í* 'shooting downward hither' or *íllú·dzàsyàm-í* 'living with someone'. Participles may be used to refer to persons or objects, as *ínúllá·dùw-í* 'a wanderer' (= 'white man'). They may also be combined with the verb 'be' to function adjectivally or as a periphrastic present tense: *ùpté tùwí* 'he is going'. Agentive nominals are formed with the indefinite pronoun *w-*: *w-ínássú* 'policeman' from the verb 'grab'. A third type of nominalization, formed with the prefix *d-*, can refer either to an action or an associated object, such as *d-ǒ·s-ì* 'to hunt'/'deer', *d-íllú·dz-ì* 'to dwell'/'house', *d-ùpímdz-ì* 'to stand'/'post'. A locative suffix with such forms can indicate a habitual location: *d-ámm-ì-t* 'restaurant' (eating place). A purposive suffix with such forms can express an instrument or futurity: *d-áwádzim-gú* 'ferry-boat' ('to-cross-for boat-by'), *ìtú d-ámm-ì·gú tyánùwí* 'that's my food' ('my to-eat-for it is') (de Angulo and Freeland 1930: 114-7).

The Apwarukeyi Atsugewi lines below come from a story told by Ramsey Blake and recorded and analyzed by Walters (1977: 148).

ac-k-u	*minuri*	*c-ma·kita-m*	*minuri-icar,*	*k̓uc-ehe*	*c-c̓nehẁo.*
3-DEM-POSS	woman	the-Coyote-POSS	woman-one	that-x	the-moon

'She was the Coyote's old lady, Moon.

k̓uc-k-i	*t-k-'-n-yeec-iṅ-a*
that-DEM-at	CONNECTIVE-PRF-INDICATIVE-2/3-sing-REMOTE-INDICATIVE

She was singing (over there to the edge of the ocean).

ka-lay-ah-ẁi	*c-yeec-i.*
AUDITORY-feel.good-TRANSITIVE-PERCEPTUAL.EVID-SUBORDINATE	the-sing-SUBORDINATE

(Then, he heard that) sweet, beautiful song.

k̓o·mi-k-a	*k-ẁ-asc-iw-iṅ-a*	*k̓e·*	*c-ma·kita-cka.*
there-DEM-to	PRF-INDIC-leave-thither-REMOTE-INDICATIVE	this	the-Coyote-EMPH

Then, he went for the direction (that he heard that song), Coyote.

k̓uc-k-a	*mak-uka*	*k̓e-pi*	*ehew*	*hom̓i-uka*	*usma*
that-DEM-to	and-then	this-x	mountain	there-from	maybe

Then, just right over the hill, a little further over the other side,

c-popse·-i	*k-'-n-ip-a*	*mak*	*anca*	*k-'-n-puṁ-a.*
the-find-SUBORDINATE	PRF-INDIC-2/3-think-INDIC	and	next	PRF-INDIC-2/3-go-INDIC

he still heard the same song, and he just kept on going.'

POMOAN = KULANAPAN FAMILY

Southeastern Pomo*: *Sulphur Bank, Lower Lake*
Eastern Pomo: *Upper Lake, Big Valley*
Northeastern Pomo*
WESTERN BRANCH
Northern Pomo: *Pinoleville, Guidiville, Potter Valley*
SOUTHERN GROUP
Central Pomo: *Hopland = Shanel, Yokaya, Point Arena-Manchester*
Southern Pomo: *Salmonhole, West Creek*
Kashaya = Kashia = Southwestern Pomo

The Pomoan language family, termed Kulanapan in Powell 1891, consists of seven mutually unintelligible languages spoken in northern California, from just south of Santa Rosa northward about 90 miles, and from the Pacific coast inland to the Sacramento Valley. The subgrouping above was proposed by Oswalt on the basis of shared cognates (1964a: 412). Southeastern, Eastern, and Northeastern Pomo are the result of successive separations from the main group. Halpern proposed a similar classification based on phonology, with Northeastern Pomo, Northern Pomo, and the Southern group diverging simultaneously (1964: 90). The family was classified as part of Dixon & Kroeber's 1913a Hokan stock and as Northern Hokan in Sapir 1929a.

The individual languages were named by Barrett 1908b on the basis of their geographical relationships to each other, but the names have had the unfortunate effect of suggesting that they are dialects, which is not the case. The Kashaya or Southwestern Pomo, living along a 30 mile stretch of the coast in modern Sonoma county, were first encountered by Russians when Fort Ross was founded in 1812. To the west of them along the lower course of the Russian River were the Southern Pomo, who bore the brunt of missionization. To the north of both, from the coast to about 40 miles inland, were the Central Pomo. To the east around Clear Lake were the Eastern Pomo, and east of them around East Lake and Lower Lake the Southeastern Pomo. North of the Central Pomo were the Northern Pomo. To the northeast in a non-contiguous area on the eastern slope of the Inner Coast Range were the Northeastern Pomo. Kashaya is still spoken by several dozen people, Central Pomo by a handful and Southern, Northern, and Eastern Pomo by very few. Southeastern and Northeastern Pomo have now disappeared.

Principal published sources for the languages are as follows. Barrett 1908 contains lexical items from all of the languages. For Kashaya, there is a detailed grammar (Oswalt 1961), a rich collection of texts (Oswalt 1964b), and discussions of phonology (Buckley 1990, 1991, 1992, 1993, 1994a,b, Oswalt 1998) and evidentials (Oswalt 1986). For Southern Pomo, Oswalt 1977a provides a text with grammatical notes. For

Eastern Pomo, there is a brief sketch in Kroeber 1911, a text in de Angulo 1927, more detailed grammars in McLendon 1975 and 1996, discussion of discourse markers in McLendon 1979, and texts with discussion of rhetorical structure in McLendon 1977, 1978, and 1982. For Southeastern Pomo, there is a grammar (Moshinsky 1974). For Northern Pomo, O'Connor 1992 provides a detailed grammar and Vihman discusses numerals. For Central Pomo, there are discussions of morphology in Mithun 1998a, number in Mithun 1988b, case in Mithun 1991a, negation in Mithun 1998b, reference in Mithun 1990, 'switch-reference' in Mithun 1993a, irrealis in Mithun 1995a, word order in 1995d, and prosody in Mithun 1993b, 1996f. Work on comparative Pomoan is in McLendon 1973, 1976, Moshinsky 1976, and Oswalt 1964c, 1976c, 1977b. Contact phenomena are discussed in Oswalt 1958, 1971, McLendon 1969, and Mithun 1992a. Forms cited here are Central Pomo from speaker Frances Jack (p.c.) of the Hopland rancheria.

The languages display rich inventories of consonants. There are bilabial, dental, alveolar, palatal, velar, and uvular obstruents in plain, aspirated, and ejective series: *p, ṯ, t, č, k, q; pʰ, ṯʰ, tʰ, čʰ, kʰ, qʰ; ṗ, ṯ̓, t̓, č̓, k̓, q̓*. There are bilabial and alveolar voiced stops *b, d* in some languages, and glottal stop *ʔ*. There are fricatives *s, ṡ, š*, and *h*. (In Southeastern Pomo, original aspirated obstruents have become fricatives *f, s, š, x,* and *x̣*, and in Eastern and Northern Pomo **qʰ* has become *x*.) Resonants are *m, n, l, w,* and *y*. Eastern Pomo has developed a distinctive set of voiceless resonants from original *hR* sequences. Although for the most part the languages have similar consonantal inventories, the palatal, velar, and uvular series are not always cognate across the languages. Southern, Northern, and Northeastern Pomo have no uvular series. All have basic five-vowel systems with two degrees of surface length.

Alternations involving laryngeals appear in some of the languages. Kashaya, Southern, and Northeastern Pomo show syllable-final 'laryngeal increments' that alternate with zero, and whose manner depends upon the following consonant (*ʔ* before ejectives, *h* elsewhere) (Oswalt 1998). They are reconstructed for the family (Oswalt 1976b) and hypothesized to be a trait of the Hokan stock. Raising vocalic harmony has developed in some of the languages.

The prosodic systems are varied. In Southeastern Pomo stress is initial, but in Southern Pomo it is penultimate (McLendon 1973: 33). In Kashaya, the placement of accent, distinguished by high tone, depends upon syllable weight (Oswalt 1988). In Central, Eastern, Northern, and Northeastern Pomo stress falls on roots. In Northern Pomo, stressed syllables vary in pitch according to syllable structure: CV(C) syllables have high pitch, CV· syllables low falling pitch, CVʔ syllables medium falling pitch, and CV̇C syllables an initial rise then fall (Vihman 1976). In Kashaya and Central Pomo, syllable structure induces patterns of alternating length.

There are distinct lexical classes of pronouns, nouns, adjectives, and verbs.

Pronouns are independent words except for special prefixal forms that appear with kinship terms. First and second persons are distinguished in all of the languages, in singular and plural. In some of the languages, demonstratives are used for third persons, while in others, more elaborate distinctions exist, between masculine and feminine, and spatially proximate versus distal or absent. There is also a special category of empathetic or logophoric pronouns used when relaying the thoughts or words of third persons (O'Connor 1984, 1990, Mithun 1990, 1993a).

Nouns may be compound: *ʔúy qʰabè* 'face-rock' = 'eye'. In nominals referring to persons, pronouns, kinship terms, and a few other nouns, three cases are distinguished: agent, patient, and possessive. Kinship terms have additional vocative forms. There are distributive and collective suffixes for nouns and adjectives, and instrumental, comitative, and locative enclitics for noun phrases. These may be followed by enclitics indicating definiteness and/or topic contrast.

Verb morphology can be elaborate. Verbal proclitics indicate location or direction: 'hither from within earshot', 'hither from a distance', 'up to', 'away', 'together', 'downstream', 'upward', 'across water', 'homeward', 'inside', 'out', 'outdoors', 'out in the wild', 'off', 'backward', etc. Next come a large set of instrumental-causative prefixes, that indicate a kind of motion or state: 'orally', 'by collecting', 'by pushing', 'by gravity', 'mentally', 'with the fingers or fine work', 'with mass, by sitting', 'by water flowing', 'holding by a handle', 'by stepping', 'by kicking', 'by internal force (burning, freezing)', 'visibly', 'by thrusting', 'by sucking', 'by biting', 'by swinging', etc. Oswalt (1976b: 16) reconstructs 21 for Proto-Pomo. Verb roots may imply the shape or number of the absolutive participant: *ʔčʰá·w* 'for one person to sit, live', *napʰów* 'for more than one person to sit, live'; *čóm* 'for liquid to sit in a container'. Verb stems may be reduplicated to indicate repetitive motion: *dalídaliw* 'pushing-flap-pushing-flap-PERFECTIVE' = 'wave the hand'.

Various kinds of suffixes may follow the root. Some pertain to number; there are markers for multiple eventhood, multiple states, and cooperating agents. A semelfactive specifies a single occurrence. Some suffixes indicate direction: 'across/past', 'around to the other side', 'up to', 'in hence', 'in hither', 'out hence', 'out hither', 'down', 'up hence', 'up hither', 'against', 'here and there'. There are also inchoative, causative, reflexive, comitative, defocusing marker that backgrounds the agent, and in some languages, a negative suffix.

Although tense need not be specified, aspect is systematically marked. Verbs may be imperfective, involving some internal temporal texture, or perfective, presented without internal temporal structure. In some of the languages, aspectual markers may be applied repeatedly to verbs, creating complex aspectual distinctions such as durative perfective, habitual, and frequentative. Several enclitics may follow either uninflected stems or those containing various combinations of aspect markers. One

is an immediate or factual marker, for events or states in progress or for general truths. Others are anticipatory, future, conditional, and optative markers. Distinct singular and plural imperative suffixes are added directly to stems.

Various evidential enclitics indicate the source of knowledge presented. Among these are a hearsay marker; an inferential; a visual indicating that the speaker personally witnessed the event; an aural indicating that the knowledge comes from non-verbal sound; a performative indicating that the speaker actively performed the action; and an affective indicating that the speaker was personally affected.

Finally, the Pomoan languages are known for a set of verbal suffixes and enclitics, sometimes termed 'switch-reference markers', that function to link clauses. One set, primarily suffixes, link closely related events or states, usually involving the same participants, while the other set, usually enclitics, link events or states, often involving different participants, that retain more conceptual distinctness. Discussions of these markers can be found in the grammars and in Oswalt 1985, and Mithun 1992.

Some of the features mentioned above can be seen in the section of Central Pomo narrative below, told by Mrs. Jack. Clause-linking markers 'when', 'and', and 'as' are in the third, fourth, and last lines. The special empathetic pronoun *tí·kʰe* 'her own' in the last line is from a paraphrase of the young lady's words. The couplet-like structure in the third and fourth lines is a typical discourse device.

Béda=ḫ̱ow *našóy* *ʔéy=yo-w,*
here=from young.lady away=go-PERFECTIVE
'A young lady from here went away

pápil *čá-w=yo-w=ʔkʰe.*
Sp.paper house-in=go-PERFECTIVE=FUTURE
to go to school.

School=ʔel *ʔ=yé-w=da,* *lá-l=l* *qó=yo-w,*
=the working-stop-PERFECTIVE=when back-at=to hither-go-PERFECTIVE
When the school stopped, she returned,

dóy *ɬʰi-n* *ʔčʰá··-ba,* *lá-l=il* *qó-yo-w*
long not-IMPERFECTIVE one.sit-and back-at-to hither-go-PERFECTIVE
didn't stay very long, and returned,

ɬí=·kʰe *čanú=ʔel* *šʔú··č-'* *hí-h-du-n.*
own=POSS word=the ignore-INCHOATIVE-PERFECTIVE say-PERFECTIVE-IMPERFECTIVE-as
saying that she forgot her language.'

SAHAPTIAN = SHAHAPTIAN FAMILY

Nez Perce = Nimipu = Numipu = Chopunnish: *'Upriver = Upper = Eastern dialects, Downriver = Lower = Western dialects*

Sahaptin: *Northeastern dialects (Palouse*, Lower Snake* (Wawyukma, Chamnapam, Naxiy̓ampam), Wanapam, Walla Walla = Waluulapam); Northwestern dialects (Yakima, Kittitas = Pshwanwapam, Upper Cowlitz = Taitnapam, Upper Nisqually = Mishalpam, Kli(c)kitat); Columbia River = Southern dialects (Umatilla, Rock Creek, John Day, Celilo, Tenino, Tygh Valley)*

The Sahaptian languages are spoken in the southern Plateau culture area. At contact the Nez Perce were in the area where Washington, Oregon, and Idaho now meet, from the Blue Mountains in the west to the Bitterroots in the east. The Eastern and Western dialects were separated by the Snake River. The name *Nez Perce* (now pronounced [nez pərs]) is attributed to French Canadians who observed the shell ornaments worn through the septum until the early 19th century (Aoki 1970: 2). Their name for themselves is *nimí·pu·*. During the 19th century many Cayuse speakers switched to Nez Perce. There are around 60 Nez Perce speakers in all (Harold Crook p.c. 1998): perhaps 3 very fluent Upriver speakers on the Nez Perce reservation in Washington, 1 or 2 on the Colville reservation in Washington, 3 very fluent Cayuse Nez Perce speakers on the Umatilla reservation in Oregon, and 3 or 4 very fluent Downriver speakers in Lapway, Idaho (Noel Rude p.c.).

Early work on Nez Perce was done in the 1830s by Henry Spalding, a Presbyterian missionary who published primers and Bible translations (1839a,b, 1840a,b, 1842, 1845). Early grammatical sketches are by Smith (Hale 1846), by Ainslie (1876) and by Anthony Morvillo (1888, 1891), a Jesuit missionary who also compiled a dictionary (1895). Archie Phinney, a Nez Perce speaker working with Boas, recorded extensive texts from his mother (1934). Additional texts are in Aoki 1978, 1979, and Aoki & Walker 1989. Modern sketches and grammars are in Velten 1943, Aoki 1970, and Rude 1985, and a dictionary is in Aoki 1994b. Published and unpublished works are listed in Aoki 1970 and Rude 1985. More recent is work on phonology by Crook (1996, 1998), word order (Rude 1992a), and inflection (Rude 1996).

Sahaptin was spoken to the west of Nez Perce. Kinkade, Elmendorf, Rigsby, & Aoki 1998 note that the name *Sahaptin* comes from an Interior Salish term for the Nez Perce (Columbian *sḥáptənəxʷ*). The Northeastern dialects, most influenc-ed by Nez Perce, were spoken along the Columbia River from Priest Rapids almost to Wallula Gap and the lower Yakima and Snake Rivers. The Northwestern dialects were mainly in the Yakima drainage. The Southern dialects were along the Columbia River east of the The Dalles and into the Deschutes, John Day, and Umatilla drainages. Sahaptin speakers now live on the Warm Springs and Umatilla

reservations in Oregon, the Yakima reservation in Washington, at Rock Creek, Priest Rapids, and Nespelem, Washington, and at Celilo, Oregon. Perhaps 5 speak Walla Walla, 5 Wanapam, 10 Yakima, 3 Klikitat, 10 Warm Springs, 5 Umatilla, 2 Wana, and 2 John Day (Noel Rude p.c. 1992). Palouse was last spoken in 1965.

Early work on Sahaptin was done by two missionaries, Pandosy, who produced a short grammar and dictionary (1862), and St. Onge, who wrote a primer and catechism (1872). Kinship is described in Jacobs 1934, and narrative structure in Hymes 1987. A sketch is in Millstein 1993. Modern grammars are in Jacobs 1931 and Rigsby & Rude 1994, texts in Jacobs 1929, 1934, 1937, Rigsby 1978, and Hymes & Suppah 1992, and dictionaries in Beavert & Rigsby 1975 and Millstein 1990.

The relationship between Nez Perce and Sahaptin was noticed immediately by Lewis and Clark, who first recorded the languages in 1805-6. Their vocabularies have unfortunately been lost. Reconstruction of Proto-Sahaptian is discussed in Velton 1934, Aoki 1962, 1966a,b, Rigsby 1965a, Jacobsen 1968, and Rigsby & Silverstein 1969. In 1894, on the basis of the scant material available at the time, J.N.B. Hewitt and Powell proposed a possible larger genetic grouping, Shahapwailutan, linking the Sahaptian family, Cayuse and Molala (their Waiilatpuan), and Lutuami (Klamath-Modoc). In his 1929 classification Sapir adopted the grouping as a branch of a larger Penutian stock, renaming it Plateau Penutian. These relations are further examined in Velton 1943, Aoki 1963b, DeLancey, Genetti, & Rude 1988, Rigsby 1965a,b, 1969, 1971a, Rigsby & Silverstein 1969, Rude 1987. Goddard 1996b finds the relationship probable. Diffusion and acculturation are described in Rigsby 1965b, Aoki 1971, 1975, and DeLancey 1988a.

The Sahaptian languages have attracted attention for their vowel harmony and for their complex case marking. Vowel harmony is described in Rigsby 1965a, Aoki 1966a, 1970, and Rigsby & Silverstein 1969. Implications of the system are taken up in Lightner 1965, Zimmer 1967, Aoki 1968, Chomsky & Halle 1968: 377-8, Jacobsen 1968, Kiparsky 1968, Zwicky 1971, Kim 1978, and Hall & Hall 1980. Grammatical relations are discussed in Rude 1982, 1985a,b, 1986b,c, 1988b,c, 1991a,b, 1992b, 1994, 1997, and Woolford 1997.

Some features of the family can be illustrated with examples from Nez Perce. (Examples of phonology and morphology are from Aoki 1970; examples of syntax are from Rude 1982 and 1985.) The consonant inventory consists of stops and affricates *p, t, c* (apico-alveolar), *k, q, ʔ*; spirants *ɬ, s, x, χ, h*;, nasals *m, n*; glides *w, y;* lateral *l*; ejectives *p̓, t̓, c̓, k̓, q̓*; and glottalized resonants *m̓, n̓, w̓, y̓, l̓*. The stops *p, t, c, q* occur geminated: *k̓accaynó·mya*ʔ*c* 'coyote'. Dentals *t, ɬ, n, l* are palatalized before *u*, and lamino-alveolars *s, c* are palatalized before *i*. Glides *w, y* are voiceless finally. There are five vowels: *i, e, a, o, u*. Vowel length and stress are distinctive: *sís* 'navel', *sí·s* 'broth'; *wé·cese* 'I am riding', *we·cé·se* 'I am dancing'. Syllables have simple onsets but

potentially complex codas, with canon CV(·)(C)(C)(C)(C): *weléyk̓ipckt* 'to tie', *we·cʔmqt* 'to get splinter in foot'.

There is extensive vowel harmony. The vowels appear in two series, a recessive series *i, e, u,* and a dominant series *i, a, o*. Within a word all vowels are from the same series. If any vowel in a word is dominant, all others shift to become dominant. The root *pu·* 'people', for example, with recessive vowel *u·*, retains its shape in combination with other morphemes containing recessive vowels: *tewé·pu·* 'people of Orofino, Idaho'. With morphemes containing dominant vowels, however, its vowel shifts to its dominant counterpart *o·*: *so·yá·po·* 'the white people'. Similarly, the root *cemí·tx* 'huckleberry' retains its recessive vowels with suffixes containing recessive vowels: *cemitéxki* 'with huckleberry', *cemitxnú·t* 'without huckleberry'. The recessive vowels shift to their dominant counterparts when suffixes with dominant vowels are added: *camitáxlaykin* 'near huckleberry', *camitk̓áyn* 'for huckleberry'.

The vowel *i* is part of both the recessive and dominant series, but it is not neutral. Some instances of *i* function as recessive, not affecting neighboring recessive vowels, while others function as dominant, causing recessive vowels to shift to dominant. The *i* in the root *tillé·p* 'be lonely' is basically recessive, as can be seen by its cooccurrence with the recessive *e*. The *i* of the characterizing suffix *-t̓ic* is dominant, causing the root vowel *e* to shift to its dominant counterpart *a* in *tillá·p̓ic* 'lonesome'. Jacobson 1968 provides a historical account of the system. Modern *i* represents the merger of two earlier vowels, perhaps *i* (recessive) and *ə* (dominant). The first vowel of the root 'be lonely' is a reflex of **i*, and the vowel of the characterizing suffix a reflex of **ə*.

Nez Perce shows sound symbolism, in which *s, n, k,* and *e* alternate with *c, l, q* and *a* respectively, to mark diminutives. Diminutive forms indicate smallness (*síḱem* 'horse', *ciq̓á·mqal* 'dog'), kinship to first person (*ʔimsí·s* 'your paternal aunt', *naʔcí·c* 'my paternal aunt'), verisimilitude (*sé·x* 'onion', *ca·xcá·x* 'wild onion') or contempt in tribal names (*ʔiskí·cuʔmix* 'Coeur d'Alene', *ʔickí·cuʔmix* 'Coeur d'Alene' in derision).

Verb stems consist of a verb root, noun root + verb root (*qilílu·* 'rawhide' + *wéwye* 'beat' = 'sing a departing song for warriors'), verb root + verb root (*c̓í·q* 'speak' + *temé·w* 'be in excess' = 'talk too much'), or adverbial prefix + verb root. Aoki found 167 adverbial prefixes with meanings such as kinds of instruments ('with shell or beadlike object', 'with loop-like object', 'with knee', 'with teeth'), kinds of motion ('by lying on', 'in single file', 'running (of hoofed animals)', 'soaring'), locations or directions ('in the distance', 'backwards'), time ('in the morning'), medium ('in rain or snow'), shape or consistency ('in connection with a barklike object', 'with sticky matter'), and others: *qisím-* 'in anger', *qisímkeʔykse* 'I am going away in anger.'

Verbal prefixes indicate person and number of core arguments. Verbal suffixes mark reciprocals, reflexives, distributives, causatives, spatial notions ('as the object passes by', 'remote', 'over', 'into brush'), inceptives, benefactives, reversatives,

comitatives, negatives, desideratives, manners ('half-heartedly', 'in competition', 'anxiously'), tense, aspect, mode, number, and more: *hi-temé·-sitk-etk-u?* '3-throw-encircle-as.object.goes.by-FUTURE' = *hitamá·sitkatko?* 'he will lasso as you go by'.

Noun stems may be simple (*yá·ka?* 'brown bear') or compound (*cawitáx-si·s* 'carrot-soup'). A reduplicative prefix marks distributives: *há·cwal* 'son', *hahácwal* 'sons'. Possession on kin terms is shown by prefixes: *tú·t* 'father', *na?-tó·t* 'my father'. 18 other prefixes have a variety of modifying functions ('distant', 'old', 'short', 'biting', 'in camping'): *'eteyé·-ku·s* 'distant-water' = 'ocean'. Suffixes show a range of functions ('cure for', 'season of', 'creature from', 'also', 'without'): *ne?-'ilú·t-twe·* 'my-belly-having.in.common' = *?inílútwe·* 'my half-brother'. Nominals may also be derived from verb stems with animate agentive, inanimate agentive, instrumental, and various characterizing nominalizers: *we·-ke?yk-e?í* 'fly-go-INANIMATE.AGENTIVE.NOMINALIZER' = 'airplane', *ítux-nípec* 'gossip-DESIDERATIVE.NOMINALIZER' = 'gossiper'.

Nouns are inflected for case: ergative/genitive, objective, benefactive ('for'), associative ('with'), instrumental ('with'), allative ('to'), ablative ('from'), locative ('at', 'in', 'on'), and resultative ('because of'). There are senior and junior vocatives. The case suffixes appear on every constituent of a complex nominal: *ko-nyá ya?wí·c-pa kús-pe* 'that-LOC cold-LOC water-LOC' = 'in that cold water'. A more detailed discussion of case in Nez Perce is in section 4.3.5 on grammatical relations.

All possible orders of constituents occur, and modifiers are often widely separated from the elements they modify. Constituents tend to be ordered in decreasing order of significance or newsworthiness within the discourse. Nominals introducing or reintroducing new participants, or showing contrast, thus tend to appear early in the clause, while those reiterating the identity of referents tend to appear late. Questions and hortatives are formed with initial particles: *wé·t-e·x kúse* 'Q-1 go' = 'Can I go?'

Clauses are linked by juxtaposition or particles. Complements are either juxtaposed ('She knew, he had shot four grouse') or nominalized ('He.sees climbing-ALLATIVE' = 'He sees me climbing'). Sequential clauses are introduced by *kaa*, subordinate clauses by *ke*. In adverbial clauses, an adverb follows the subordinator.

[. . .]	*ka*	*koná*	*likíp*	*pée-ku-ye*
	SUBORDINATE	there	touch	3/3-do-ASPECT

'[Quickly the girl cut her shirt] where he had touched her.'

In relative clauses, a noun or pronoun follows the subordinator.

sooyáapoo-m	*ke-?imée-m*	*pée-su-su?k-sine*	*pée-?ni-sine*	*qíl'ilu*
whites-ERG	SUBORD-they-ERG	3/3-recognize-ASPECT.PL	3/3-give-ASPECT.PL	hide

'The whites who recognized her gave her deer hides.'

Some of these structures can be seen in the passage below from a true story told by Mrs. Ada Patrick in 1983 to Noel Rude (1985: 255-73). The analysis is his.

Koná	*hipapáayna*	*wéetespe*	*kaa*	*péene,*
that-LOCATIVE	3-PL.SUBJECT-arrive-PRF	land-LOCATIVE	and	3/3-tell-PRF

'They arrived at that place and she told her,

"Kíi	*hüwes*	*yoq̓opí*	*wéetes*	*kenum*	*koná*	*taxc*	*peq̓niyú?.*
this	3-be-PROG	that-INTENSIVE	land	REL-INCL	that-LOC	soon	PL-dig-IRR

"This is that very place where we soon will dig.

Qawásna	*kíi*	*?eq̓nisúix*
kow-OBJECT	this	1/3-dig-PROGRESSIVE-PL

Now we are digging kows

kaa	*kíye*	*cawitáxna*	*kíye*	*?epep̓éew̓iyú?."*
and	we	carrot-OBJECT	we	1/3-PL-look.for-IRREALIS

and we will look for wild carrot."

Kaa	*?úyit*	*?inüt*	*hipaaníya.*
and	first	tepee	3-PL-make-PRF

And first they set up the tepee.

Coqoycóoqoy	*?ewsíix*	*kúkuc.*
small.tepee	3GENITIVE-be-PL	small

They had a small tepee.

Kaa	*hihíce*	*?ácip,*
and	3-tell-PROGRESSIVE	woman's.younger.sister

And she is telling her younger sister,

"Taxc	*kíye*	*?iléxni*	*héecu*	*paaníyo?.*
soon	we	much	firewood	PL-make-IRREALIS

"Soon we will prepare much firewood.

Pen̓ikeynéeku?	*?in'itx."*
PL-carry-into-IRREALIS	tepee-ALLATIVE

We will carry [it] into the tepee."'

Salinan*: *Antoniaño = Sextapay, Migueleño*

The Salinan language was originally spoken in central California from the Pacific coast inland to the main ridge of the coast range, and from the head of the Salinas drainage to modern Soledad. The name *Salinan* comes from the Salinas River; it is not known what the people called themselves. The dialect names come from the names of Spanish missions; Mission San Antonio de Padua was founded in 1771 at a village originally called Sextapay, and Mission San Miguel to the south was founded in 1797. Early writers refer to a third dialect they termed Playano, spoken along the beach, but this dialect was never recorded. The language was last spoken about 1960.

The language has no close relatives. The possibility of a remote relationship with the Chumash languages to the south was raised in 1876 by Gatschet and in 1904 by Kroeber, who noted grammatical similarities. In 1913 Dixon and Kroeber grouped Salinan and Chumash together into a unit they called Iskoman, which they later hypothesized to be a branch of a Hokan stock. Sapir presented cognates supporting the Hokan affiliation in 1917, 1920c, 1921c, 1925c, but Iskoman no longer appears plausible as a unit. The Hokan affiliation of Salinan is still considered likely but not yet fully demonstrated.

The first priests at the missions, Fathers Bonaventure Sitjar and Miguel Pieras, left a vocabulary of Antoniaño, later published with a short grammatical introduction by Shea (Sitjar 1861). During the 19th century a number of wordlists were collected. In 1918 Mason published a grammar with texts and a list of vocabulary items from his own and previous work, which was reviewed by Sapir in 1920. Harrington made several field trips between 1912 and about 1932, primarily reeliciting material from earlier sources, and left a corpus of over 5000 words and phrases. Jacobsen worked with the last speakers of both dialects in 1954, 1955, and 1958, producing a corpus of around 1400 entries, some paradigms, and a text. A catalogue of all sources is in Turner 1988. The Harrington and Jacobsen material is particularly important because of its phonetic accuracy. By comparing the Mason, Harrington, and Jacobsen notes Turner reconstructed the phonological inventory of Salinan (1980), which she published with the data. She also described areal and genetic affiliations (1983) and compiled a grammar of Antoniaño (1987). Material cited here is from Turner unless noted.

Turner reconstructs obstruents *p*, dental *t*, postalveolar *ṭ*, apical affricate *c*, *č*, *k*, *ʔ*, *s*, *š*, *x*, and *h*, and resonants *m*, *n*, *l*, *r*, *y*, and *w*. All but the fricatives and *r* occur both plain and glottalized. The plain stops and affricates are optionally aspirated syllable-finally, and the resonants devoiced utterance-finally. In addition, *b*, *d*, *g*, *f*, *β*, *ð*, and *γ* appear in Spanish loans. There is a basic three-vowel system with contrastive length. Stress is distinctive: *tekahlét* 'egg' versus *tékahlet* 'my egg' (Harrington cited in Turner 1980). There is some syncope: Mason gives *spanat* 'hide', *sapant-o* 'its hide'.

Nouns, verbs, and adjectives all show a variety of formal mechanisms for marking plural, involving some reduplication, vocalic ablaut, infixation, and suffixation. Mason concludes that the different forms originally had distinct functions, such as iteration, distribution, and multiplicity of agent or patient. He cites the following set from Sitjar: *kaxó-ta* 'a man hunts an animal', *kaxó-ten* 'a man hunts many animals', *kaxo-tóta* 'many men hunt an animal', *kaxó-nilet* 'many men hunt many animals'. One infix is a dual: *mé·n* 'my hand', *méhen* 'my two hands'; *kséhne?* 'they two are walking'. Turner points out that multiple plural markers may cooccur within a word, and that their order is not always the same: *šóka?-at-tén* 'rivers', *?aš-ten-at* 'elks'.

Nouns are not inflected for case or gender but may bear possessive affixes, and/or a demonstrative proclitic. Possession is indicated with a possessive/nominalizing prefix *ṭ-* plus first person prefix (*ṭ-é-sanaṭ* 'my skin'), second person prefix (*ṭ-mé-sanaṭ* 'your skin'), or third person suffix (*ṭ-e-sanáṭ-o* 'his skin'). Slightly different sets of markers appear with inalienable possessions, alienable possessions, and kinship terms. A demonstrative proclitic may precede the nominal complex: *na=ṭ-á·m* 'this=house'.

Verb stems are usually immediately preceded by a prefix *k-* for patient-oriented verbs (*k-šétep* 'he died'), or a prefix *p-* for agent-oriented verbs *p-ayé·mo?* 'he carried it'. These prefixes can transitivize: *k-ó·maẏe* 'it began', *p-omá·ẏe* 'he started it'; *k-énay* 'he was wounded', *p-enáy-ko?* 'he hit it'. They may also interact with ablaut: *k-yem* 'was seen', *p-yem* 'look at, see' (transitive), *p-yam* 'know' (transitive), *p-ya·m* 'see, find' (transitive). Adjectival verbs and those bearing the passive suffix appear with *k-*: Mason gives *k-ck'aiy-aiyik he'k ṭe hiyó't* '*k*-kick-PASSIVE I by they' = 'I am kicked by them' (*heyó't p-cik'ai´y-ak* 'they *p*-kick-me' = 'they kick me').

Intransitive subject pronominal prefixes may precede the agent/patient markers. To the left of these may be certain modal markers, including a negative, interrogative, conditional, purposive, and various subordinators: *kára k-e-k-?o·ḱé?* 'not NEGATIVE-I-STATIVE-vomit' = 'I have not vomited.' A proclitic sentence connector may precede the entire complex. Verbs may be nominalized: Mason gives *ṭ=excai´'* 'dawn', *k-ecxai´'* 'I woke up'. When modal markers or connectors appear, the agent/patient prefixes are often replaced by the nominalizer.

Following the verb stem may be the passive suffix, a medio-passive or reflexive, a causative, a desiderative, then a set of objective pronominal suffixes: *yax* 'come on!', *yax-te´-k'* 'come-CAUSATIVE-3OBJECT' = 'bring him!' (Mason). Various tense enclitics may follow these, perhaps with a subject enclitic: *p-oxó·m-o?=hé ḱ=ta?* 'AGENT-hide-3OBJECT=1SG.SUBJECT=NEAR.FUTURE' = 'I am going to hide it.'

The passage below is from an Antoniaño story 'Prairie-Falcon, Raven and Coyote', told by David Mora in 1916 to Mason, who published it with morphological analysis and interlinear and free translations (1918: 60-7). Turner retranscribed it and adjusted glosses. Transcription and glossing here are from Turner 1987: 208, translations from

Mason. The extensive pluralization can be seen here, with plural infixes in 'passed', 'enter', and 'beauties', and suffixes in 'then they went', the quotative, and 'sit down'.

k-lápay	*pe-xeyó·ɬ.*
STATIVE-three	DEM-3PL
are three	the they

'The three [friends, Prairie-Falcon, Raven and Coyote]

rám-ɬ-yá·-tel	*xóɬ-l-op*	*ro-p-ɬ-e·m-ó.*
then-NOMINALIZER-go-PL	pass-PL-pass	LOCATIVE-DEM-ARTICLE-house-3SG
then they went	passed	by his house

going along passed by the house of [Skunk].

rá·m-ɬeʔ	*pe-lḱá*	*k-ćék*	*na-šte·-lwáʔ*	*k-šawená·-ne.*
then-QUOT	DEM-coyote	PATIENT-appear	DEM-old-man	PATIENT-dance-NMLZR
Then said	the coyote	he appears	this old man	is dancer

Then Coyote said, "This old man Skunk appears to be a dancer.

p-o-ló-x	*ɬa-ɬó·ke*	*p-o-ló-x*
AGENT-enter-PL-enter	LOC-inside	AGENT-enter-PL-enter
enter	within	enter

Come on inside, come on."

rám-ɬeʔ-taḱ	*k-áš-el*	*o-sma-ha-t-él.*
then-QUOT-PL	STATIVE-sit-PL	INTERJECTION-handsome-PL-handsome-PL
then said to them	sit down	beauties

They went inside and [Skunk] said, "Sit down, my good fellows!"

rám-ɬeʔ	*p-a·tá*	*en-ć́eń*	*ro-pa-tá·máʔ*	*sma-ha-t-él.*
then-QUOT	AGT-dance	LOC-seen	LOC-DEM-man	handsome-PL-handsome-PL
then said	dance	in order to see	by the men	beautiful ones

Then [Coyote] said, "Dance so that these handsome men may see you."

rám-ɬeʔ	*ay*	*šte-lwáʔ-léḱ*	*še*	*mé·t-o-néḱ*	*áʔ-a·m-ko*	*ɬeʔ-šá·wena·-ne*
then-QUOT	ay	old-man-1SG	already	try-3SG-1SG	if-able-3SG	LOC-dance-NMLZR
then said	OK I am an old man			I try it	if possible	to dance

Then [Skunk] said, "All right, but I am an old man. I will try to dance if I can." '

SALISHAN FAMILY

Bella Coola = Nuxalk: *Bella Coola, Kimsquit, Tallio*

COAST

CENTRAL SALISH

NORTH GEORGIA BRANCH

Comox = Çatlotlq: *Island Comox*, Mainland Comox (Sliammon=Llaamen, Homalco, Klahoose)*

Pentlatch*

Sechelt = Seshelt = Shashishalhem

SOUTH GEORGIA BRANCH

Squamish = Sqwxwu7mish = Skwxwu7mesh

Halkomelem: *Upriver = Halq'əméyləm, Downriver = Hunq'umʔiʔnumʔ, Island = Hul'q̓umi'num'*

Nooksack = ɬə́čələsəm*

STRAITS = LKUNGEN GROUP

Northern Straits: *Sooke*, Songish=Songhees=Lkungen*, Saanich, Samish, Lummi, Semiahmoo**

Klallam = Clallam = Nəxʷsƛ'áy'əmucən

Lushootseed=Puget Salish=Skagit-Nisqually=Dxʷləšúcid: *Northern, Southern*

Twana = Skokomish = Sqʷuqʷúʔbəšq*

TSAMOSAN = OLYMPIC

MARITIME

Quinault = Kʷínayɬ: *Quinault, Queets*

Lower Chehalis*: *Humptulips, Wynoochie, Grays Harbor, Willapa Bay*

INLAND

Upper Chehalis = Qʷay'áyiɬq'*: *Satsop, Oakville, Tenino*

(Lower) Cowlitz = Sƛ'púlmš*

Tillamook = Hutyéyu*: *Tillamook, Siletz*

INTERIOR

NORTHERN

Shuswap = Secwepemctsín: *Eastern, Western*

Lillooet = St'át'imcets: *Fountain = Upper L., Mount Currie = Lower L.*

Thompson = Nlaka'pamux = Ntlakapmuk = Nɬeʔkepmxcin

SOUTHERN

Okanagan = Colville-Okanagan = Nsilxcín: *Northern Okanagan, Lakes, Colville, Sanpoil = San Poil-Nespelem, Southern Okanagan, Methow*

Spokane-Kalispel-Flathead: *Spokan(e), Kalispel = Qalispé, Flathead = Séliš*

Coeur d'Alene = Snchitsu'umshtsn

(Moses) Columbia(n) = Nxaʔamxcín: *Sincayuse, Wenatchee, Chelan*

The 23 languages of the Salishan family cover an area extending over southern British Columbia, Washington, northwest Oregon, northern Idaho, and western Montana. There are two or three main divisions within the family. The Coast languages are more diverse than those in the Interior. The northernmost language, Bella Coola, is sometimes classified as part of the Coast division. Deeper links have been proposed between Salish and Kootenai, and among the Salish, Wakashan and Chemakuan families in a stock called Mosan, but they are not considered demonstrated. Fine surveys of the family can be found in Thompson 1973a, 1979a, Kinkade 1990a, 1992a, Thompson & Kinkade 1990, Czaykowska-Higgins & Kinkade 1998, and Kinkade, Elmendorf, Rigsby, & Aoki 1988. References to early studies are listed in Pilling 1893b. Thompson 1979a traces the history of work on comparative Salish in detail. Salishan linguistics is a particularly active field, due in part to the annual Salish conference, for which papers are pre-circulated. Though they are working papers, they are cited here because they constitute such a rich body of work. A list of papers presented from 1966 to 1995 is in Czaykowska-Higgins & Kinkade 1998. Where not otherwise specified, estimates of numbers of speakers is from Czaykowska-Higgins & Kinkade (1998: 64-7), reporting on the situation in 1995.

Bella Coola or Nuxalk is spoken by 20-30 elders on the central coast of British Columbia (Philip Davis p.c. 1994). It is isolated from the other Salishan languages and shows extensive borrowing from its Athabaskan, Tsimshian, and especially Wakashan neighbors. Nater (1984: xvii) estimates that 30 percent of its roots and stems are from Wakashan. He also notes that while the Salish portion of the lexicon links Bella Coola equally with the Coast and the Interior, the phonology and morphology are typical of the Coast. A grammar is in Nater 1984, a stem list in Nater 1977a, a list of prefixes in Nater 1978a, a Nuxalk-English dictionary in Nater 1990b, and texts with literal and free translations in Davis & Saunders 1977, 1980a and Nater 1977b. Phonology is discussed in Newman 1947, Nater 1979, 1980, 1989a, and Bagemihl 1991a,b, 1998. Davis & Saunders have done extensive work on Bella Coola, particularly on lexical suffixes (Davis & Saunders (DS) 1972, 1973 and Saunders & Davis (SD) 1975a,b,c), on deixis (1975a,b 1976a), on negation (1978a), on control (DS 1980, 1986 and SD 1982), on voice (DS 1989), on mood (DS 1979), on aspect (SD 1993), on particles (SD 1979), on conjunctions (SD 1978), on embedded clauses (DS 1978b, 1998), on other grammatical topics (DS 1976b, 1981, 1984a, b, 1989), and a grammar (DS 1997). Other work on grammar includes Newman 1969a,b, 1976, 1989, Ingram 1973 on diminutives, Nater 1981 on prepositions, Forrest 1994, Beck 1998 on voice, and Hymes 1983 on discourse. Contact is discussed in Nater 1991, Newman 1974, and Nater & Rath 1987.

Comox consists of two dialects, Island Comox, spoken until recently on the east coast of Vancouver Island, and Mainland Comox, spoken by under 400 on the adjacent British Columbia mainland at Sliammon, at Squirrel Cove by the Klahoose, and at Church House by the Homalco. Grammars are in Harris 1981 (Island) and Hagège 1981 (Sliammon). Discussions of phonology, including reduplication, are in Sapir 1915d, J. Davis 1970a,b, Hamp 1971, Kroeber 1988, Blake 1992, and Watanabe 1994; of pronominal paradigms in J. Davis 1978a; objects in Harris 1979; verbs in J. Davis 1971; transitivity in Watanabe 1996, Blake 1997; lexical suffixes and incorporation in Hagège 1978; word order in J. Davis 1973; subordination in J. Davis 1978b; and passives in J. Davis 1980. Placenames are in Kennedy & Bouchard 1983.

Pentlatch was spoken earlier by a small group to the south of the Island Comox on the eastern side of Vancouver Island. The last known speaker, Joe Nimnim, died in 1940. There is little published material on the language, but Boas collected texts and extensive vocabulary, which remain in the American Philosophical Society.

Sechelt is spoken on the southern coast of British Columbia by fewer than 40 elders. Early vocabulary, grammar, and texts are in Hill-Tout 1904a, a wordlist is in Timmers 1977, and a teaching grammar with wordlist is in Beaumont 1985. Statives are discussed in Beaumont 1973.

To the east and south of Sechelt along the British Columbia coast is Squamish or Skwxwu7mesh, now spoken by fewer than 20 elders. An early grammatical sketch is in Hill-Tout 1900. Grammar, texts, and lexicon are in Kuipers 1967 and 1969. Stress is discussed in Demers & Horn 1978, futures in Currie 1996, nouns and verbs in Kuipers 1968, the nominalizer in Nakayama 1991, voice in Darnell 1990, 1997 and Jacobs 1994, subordination in Jacobs 1992, and kinship terms in Shipley 1995.

Halkomelem consists of a chain of dialects spoken along the Fraser River and its tributaries in southwestern British Columbia, including the area around Vancouver, southeastern Vancouver Island, and into Washington. Three major dialect groups can be distinguished: Upriver (Sumas, Chehalis, Chilliwack, Tait), Downriver (Musqueam, Katzie, Kwantlen), and Island (Cowichan, Chemainus, Nanaimo). Speakers number around 125 (Tom Hukari 1995). A dialect survey is in Gerdts 1977, and dialect differences are discussed in Elmendorf & Suttles 1960 and Elmendorf 1962a. Hill-Tout 1903 contains grammatical sketches, wordlists, and texts from several dialects, and Hill-Tout 1904 has further notes and stories. A grammar of Upriver is in Galloway 1993a, one of Cowichan is in Leslie 1979, and a dictionary with grammar is in Hukari & Peter 1995. An Upriver text with analysis is in Galloway 1996 and a Cowichan text with brief grammatical sketch is in Hukari, Peter, & White 1977. Phonology is described in Harris 1966, Kava 1969, Jones 1976, Hukari 1977a, 1981, and Bianco 1996, 1998. Pronominal elements are described in Wiltschko 1998a,b. Work on grammatical relations and argument structure is in Gerdts 1980a,b, 1984, 1987, 1988a,b,c, 1989a,b,c, 1991, 1992, 1993a,b, 1994, 1995, 1998 and Hukari 1976b, 1979. Hukari also examines nonsegmental morphology (1978), attributives (1977b),

a conjunctive (1982), and imperfectives (1984). Galloway has done additional studies of reduplication (1973), time (1975), control (1978), speech events (1981), and lexicographic work on ethnobotany (1982). Determiners are discussed in M. Jones 1974, lexical suffixes in Gerdts & Hinkson 1996, color in MacLaury & Galloway 1988, and placenames in Suttles 1996, Rozen 1985.

Nooksack was formerly spoken in Whatcom County, northwest Washington, from Bellingham to Mt. Baker. Linguistic evidence of the earlier territory of the Nooksack is discussed in Galloway & Richardson 1983 and Galloway 1985. The last fluent speaker, Sindick Jimmy, died in 1977. Fieldnotes and tapes were made by Paul Fetzer, Pamela Amoss, Larry Thompson, Barbara Efrat, and Brent Galloway. Phonology is described in Amoss 1961 and Galloway 1984, reduplication in Galloway 1993b, and transitivity and control in Galloway 1997.

The Straits division consists of two languages, Northern Straits and Klallam. Relations among the languages and dialects is treated in detail in Montler 1996. Northern Straits Salish consists of dialects covering southern Vancouver Island and the adjacent area to the Washington coast around Bellingham. The Sooke dialect was spoken until recently around Sooke Basin on the southern tip of Vancouver Island. An early description of Songish, the dialect originally spoken around present Victoria, is in Hill-Tout 1907. Montler 1996a has reconstituted a text recorded by Hill-Tout. There is a more recent grammar in Raffo 1972, a dictionary in Mitchell 1968, and extensive terminology in Suttles 1974. Aspect is discussed in Raffo 1971. The Saanich dialect is spoken fluently by fewer than 20 persons on the Saanich Peninsula of Vancouver Island just north of Victoria, and on neighboring islands. A grammar is in Montler 1986 and extensive wordlist in 1991. Processes of infixation, reduplication, and metathesis are described in Montler 1989a, attributives in 1989b, relative clauses in 1993, and lexical suffixes with grammatical sketch in Pidgeon 1970. The Samish dialect, spoken earlier on Samish and Guemes Islands and smaller nearby islands, was little known until 1983, 20-30 years after it was thought to be extinct. At that time a speaker of a variety of Samish was found with relatives who were also speakers. Work with them resulted in a phonology, morphology, wordlist, and text (Galloway 1990). The Lummi dialect covers the area around what is now Bellingham, Washington. Montler reports that there have not been any native speakers of Lummi for over 10 years, though many know it as a second language (1996b). Early vocabulary is in Gibbs 1863 and an introductory grammar is in Charles, Demers, & Bowman 1978. Discussions of stress are in Demers 1972, metathesis in Thompson 1972, passives in Chinchor 1975, and negation in Demers 1997. Placenames are described in Seaburg 1972. Lummi also figures in other work by Demers (1974), Suttles (1974), Jelinek & Demers (1982, 1983, 1994), Demers & Jelinek (1982, 1983, 1984, 1996), and Jelinek (1985, 1993a,b, 1994, 1995). Little is known of the last dialect, Semiahmoo, which was north of Lummi but is unattested.

The second Straits language, Klallam, is spoken by fewer than 10 elders along the north coast of the Olympic Peninsula and across the Strait of Juan de Fuca at Becher Bay on Vancouver Island (Montler 1996c). Early vocabulary is in Gibbs 1863. A description of the language is in Thompson & Thompson 1971. Phonological topics are examined in Fleisher 1977 and Montler 1998, metathesis in Thompson & Thompson 1969, auxiliaries in Poggi 1981, paradigms in Montler 1996b, and place names in Brooks 1997. An ethnolinguistic study is in Fleisher 1976. Sound shifts in the entire Straits group are laid out in Thompson, Thompson, & Efrat 1974.

Lushootseed, formerly called Puget (Sound) Salish or Skagit-Nisqually, is the language of the Seattle area from Mount Baker to Mount Rainier, covering the entire Puget Sound watershed and adjacent Skagit River drainage, the Samish River region, Whidbey Island, and eastern Fidalgo Island. There are perhaps a handful of speakers (Vi Hilbert p.c. 1997). Two main dialect groups, Northern and Southern Lushootseed, are recognized on the basis of their stress patterns and vocabulary, though the dialects form a continuum. Northern includes the varieties spoken at Tulalip (Snohomish), Skagit (along the Skagit River, including Swinomish, and on Whidbey Island), and Sauk-Suiattle (on the Sauk and Suiattle Rivers). Southern Lushootseed dialects include Skykomish, Snoqualmie, Suquamish, Duwamish, Muckleshoot (of the Green and White Rivers), Puyallup, Nisqually, and Sahewamish. The dialects are described in Tweddell 1950 and Hess 1977. An early dictionary is in Gibbs 1877. Descriptions of the Southern dialect are in Ransom 1945b, Snyder 1950, 1968a, and Tweddell 1950 and of the Northern dialect in Hess 1967a. Snyder 1968b contains a dictionary, placename list with discussion, and texts mainly from Southern, and Hess 1976 is a monumental dictionary of both dialects, expanded in Bates, Hess, & Hilbert 1994. Additional texts are presented and discussed in Hess & Hilbert 1975a, Hilbert & Hess 1977, Bierwert 1996, and Bates 1997b. Hess and Hilbert have also prepared a pedagogical grammar (1975b, 1977, 1980). A reader containing preparatory lessons, texts, glossary, and index is in Hess 1995. Reduplication is discussed in Bates 1986, Kirkham 1991, 1992, and Urbanczyk 1996a, stress in Bianco 1995, and syncope in Urbanczyk 1996b. Studies of special grammatical topics include Hess 1973 on agency, Beck 1995, 1996 on subjecthood, Hukari 1976a and Bates 1997a on person, Hess 1993 on stem structure, Hess 1966, 1967b, 1969, 1971, 1975, 1990a on particular morphemes, Hess & van Eijk 1986 on the status of nouns and verbs, Hess 1968 on directives, Beck 1997a on transitivity, and Hagiwara 1987, 1989, on various other syntactic topics. Spatial orientation and sound symbolism are discussed in Hess 1972, 1979, and Galin 1982, 1983, 1984, 'abnormal speech' in Hess 1982, food in Amoss 1969, and humor in Hilbert 1983.

Twana was spoken at contact over the full drainage of Hood Canal on the eastern side of the Olympic Peninsula in western Washington. Earlier dialect differences (Quilcene on Quilcene Bay, Skokomish at the bend in Hood Canal and on the Skokomish River, Duhlelap at the head of Hood Canal) began to fade when all speakers were moved to the Skokomish reservation in 1859. The last fluent speaker died in 1980. Material on the language appears in Elmendorf 1960, 1961a. A detailed phonology in an early generative framework, with analyzed text and list of references, is in Drachman 1969, and a dictionary is in N. Thompson 1978. The interesting loss of nasals is examined in N. Thompson 1993. Possession is discussed in Hasnain 1977 and gender in N. Thompson 1984. An analysis of baby talk (motherese) is in N. Thompson 1985.

The Tsamosan branch of Coast Salish (termed 'Olympic' by Swadesh) consists of Quinault and Lower Chehalis on the coast, and Upper Chehalis and Cowlitz inland. It originally consisted of a dialect continuum stretching from north of the Queets River south to the center of Willapa Bay, including the drainages of the Queets, Quinault, Chehalis, and lower Cowlitz rivers. After the Quinault and Lower Chehalis settled together on the Quinault reservation on the coast, their speech became mutually intelligible (Kinkade 1963: 1). Quinault and Lower Chehalis are known by at most one speaker each (Kinkade p.c. 1997). A preliminary phonology of Qinault is in Gibson 1964, an introductory sketch in Modrow 1967, and dictionary in Modrow 1971. Lower Chehalis phonology is described in Snow 1969 and morphology in Kinkade 1979. To the east of Lower Chehalis is Upper Chehalis, with perhaps two speakers. Three dialects are recognized: Satsop, closest to Lower Chehalis, Oakville (Upper Chehalis 1 of Boas & Haeberlin 1927), and Tenino (Upper Chehalis 2). After working at Oakville in 1927, Boas published a text with analysis (1934b). A preliminary grammatical sketch with text is in Collard 1959. Based on work with speakers between 1960 and 1973 and all earlier sources, Kinkade produced a grammar with text (1963), dictionary (1991b), and analysis of another text (1987a), in addition to studies of vowel alternation (1966), reduplication (1985a), prefix-suffix constructions (1967b), the copula and negatives (1976a), the *s-* prefix (1994a), 'pseudo-auxiliaries' (1992b), reflexives (1981a), plurals (1975a, 1995), nouns and verbs (1983b), agent hierarchies (1989a), passives (1987b), reference (1990b), topicality (1989b), kin terms (1994b), and verse analysis (1983b, 1984). Kroeber 1998 examines aspect. Cowlitz was spoken until recently in an area to the southeast of Upper Chehalis. Palatalization is discussed in Kinkade 1973b, possessives in 1971, and placenames in 1997. The validity of a Tsamosan subgroup is addressed in Elmendorf 1969 and Kinkade 1993.

The southernmost Coast Salish language is Tillamook, which once extended along the northern Oregon coast from the Nehalem to the Siletz River. The last speaker died in 1970 (Kinkade 1992). Dialects include Nehalem, Nestucca, Salmon River, and the most divergent, Siletz. Frachtenberg recorded a short Siletz wordlist in 1910 at the Siletz reservation (1917b). An early grammar is in Edel 1939, based on the fieldwork of the author and that of Boas and Jacobs. A description of phonology is in Thompson & Thompson 1966, further comments on phonology are in Hamp 1967, and a description of inflectional morphology is in Egesdal & Thompson 1996. Kinship is discussed in Elmendorf 1961b and numbers in 1962b.

Interior Salish is divided into a Northern branch in southern British Columbia and a Southern branch that extends into eastern Washington, Idaho, and Montana. In the north is Shuswap or Secwepemctsin. Dialects are discussed in Kuipers 1980 and 1989. The western dialect extends along the Fraser and North Thompson rivers from Quesnel and Clearwater to Ashcroft and Kamloops, the eastern dialect along the South Thompson River from Chase to Windermere. There are 25 fluent speakers, all over age 65 (Janice Billy 1999). Grammars are in Gibson 1973 and Kuipers 1974 (with texts and dictionary) and 1989; a wordlist is in Kuipers 1975; a dictionary is in Kuipers 1983. Courses are in Kuipers & Dixon 1974 and Secwepemc Cultural Education Society 1986. There are also studies of reduplication and pronouns in Boas 1890 and van Eijk 1990, stress and glottalized sonorants in Demers & Horn 1978, Idsardi 1991a, and Taylor 1996a,b, transitive verbs in Kuipers 1970, 1992, 1993, passives in Boelscher 1990, *-əs* in Gardiner & Saunders 1990, ethnobotany in Palmer 1975, Turner et al. 1998, color terms in MacLaury 1986, ethnozoology in Compton et al. 1993, various syntactic topics in Gardiner 1985, 1991a,b,c, 1992, 1993, 1996, 1998, and discourse in Palmer 1994.

Lillooet or St'át'imcets consists of two dialects, Fountain or Upper Lillooet, about 200 miles up the Fraser River from Vancouver, and Mount Currie or Lower Lillooet about 100 miles northwest of Vancouver on the Lillooet River. There are fewer than 200 speakers (Henry Davis p.c. 1996). A brief grammatical sketch is in Hill-Tout 1905, a phonology, texts, and dictionary in Swoboda 1971, additional texts in Bouchard & Kennedy 1977 and van Eijk & WIlliams 1981, reference grammars in van Eijk 1985, 1997, and a teaching grammar in van Eijk 1991a. Vowel-consonant interactions are examined acoustically in Bessell 1997. Stress is analyzed in van Eijk 1981a, Giles 1988, and Roberts 1993, tongue root articulation in Remnant 1990, Shahin 1995, and Bessell 1998, and reduplication in van Eijk 1981b, 1993; additional topics are in van Eijk 1980a,b, 1981b, 1982, 1984, 1988, 1990c, 1991b, 1995, Demirdache et al. 1994, Roberts 1994, H. Davis 1994, 1996, Matthewson & Davis 1995, Matthewson & Demirdache 1995, H. Davis & Matthewson 1996, Demirdache 1996a,b, and Matthewson 1996.

Thompson territory extends over the lower Thompson River and into the adjacent Fraser River Canyon and Nicola Valley. There are under 500 speakers. A grammar with long text is in Thompson & Thompson 1992, an extensive sketch in Thompson & Thompson 1996a, and a monumental dictionary in Thompson & Thompson 1996b. A discussion of prosodic morphology is in Jimmie 1994, a 'semantic grammar' is in Mayes 1981, an analysis of stylized speech in narrative in Egesdal 1984, and an analyzed text in M.T. Thompson & Egesdal 1993. Ethnobotany is the subject of Steedman 1930 and Turner et al. 1990. Additional studies are in Thompson 1973b, 1979b, 1981, Thompson & Thompson 1980, 1981, Carlson & Thompson 1981, Howett 1993, and Kroeber 1990, 1992, 1996, 1997. The Northern Interior languages Shuswap, Lillooet, and Thompson are treated together in H. Davis et al. 1993, Gardiner et al. 1993, and Matthewson et al. 1993.

The Southern division of Interior Salish consists of Okanagan, Kalispel, Coeur d'Alene, and Columbian. Grammatical relations across the division are discussed in Kroeber 1986, 1988b, and subordination in Kroeber 1991.

Okanagan, also referred to as Nsilxcin or Nxak'amxcin, is spoken in south central British Columbia and north central Washington. N. Mattina 1996 reports 500-1000 speakers of varying fluency. Dialects include Northern Okanagan (Head of the Lake, Douglas Lake, Similkameen, Penticton), Lakes, Colville, San Poil-Nespelem, Southern Okanagan, and Methow (Kinkade, Elmendorf, Rigsby, & Aoki 1988). There are grammars of Head of the Lake (Watkins 1970, primarily phonology), Colville (A. Mattina 1973), and Nicola Valley (Pattison 1978). Dictionaries are in Somday 1980 and A. Mattina 1987. Vocabulary collected by James Teit in 1908 of Okanagan proper, Lake, Colville, and Sanpoil is compiled in Doak 1983 accompanied by modern forms. Colville phonology is described in Arrowsmith 1968. An extraordinary five-hour text is in A. Mattina 1985. Kinkade 1967c established Methow as a dialect of Okanagan and a phonology is in O'Brien 1967. Another study of Okanagan phonology is in Young 1971. Work on transitivity in Okanagan is in Hébert 1982a, on diminutives in A. Mattina & Peterson 1997, and on aspect and the lexicon in N. Mattina 1996. Additional studies are in Watkins 1974, A. Mattina 1978a,b, 1979, 1980, 1981, 1982, 1993a,b, 1994, 1996, Hébert 1978, 1979, 1982b, 1983, Turner et al. 1980, Doak 1981, A. Mattina & Jack 1992, and Czaykowska-Higgins et al. 1996.

Spokane-Kalispel-Flathead is a dialect continuum that stretched historically along the Spokane River in eastern Washington, through Chewelah, into Kalispel proper along the Pend Oreille River running from northeastern Washington across Idaho into Montana, and Flathead (Séliš), in western Montana. Perhaps 20 speakers of Spokane remain (Barry Carlson p.c. 1997) on the Spokane reservation 50 miles northwest of Spokane, Washington. Most Kalispel speakers are now on the Kalispel reservation in Cusick, Washington, and number about 100. Vogt noted that when he

visited there in 1937, everyone spoke the language (1940a). Flathead is spoken fluently by perhaps 70 in Northwestern Montana (Sally Thomason p.c. 1996). It is quite similar to Kalispel and is often referred to by that name. A wordlist recorded by David Thompson in 1809-10 is analyzed in Mattina & Taylor 1984. An early Flathead dictionary is in Giorda 1877-9, and grammars in Mengarini 1861 and Post [1904], edited with modern transcription in Speck 1980. Krueger collected Flathead vocabulary and published it with an index (1960, 1961a,b, 1967b). Vogt published a Kalispel grammar with texts and dictionary (1940b) after just 11 weeks on the Kalispel reservation. Zoological terms are in Weisel 1952, musical terms in Merriam 1967, and botanical terms in Hart 1974, 1979. A grammar of Spokane is in Carlson 1972a, a dictionary in Carlson & Flett 1989, and a text in Carlson 1978. Additional work on Spokane is in Carlson 1972b, 1976, 1980a,b, 1989, 1990, 1991, 1993, 1996, Carlson & Thompson 1982, Carlson & Bates 1990, 1991, Egesdal 1991, Bates & Carlson 1992, forthcoming, Orser 1993, and Osterman 1995. Kroeber 1995 discusses Kalispel rhetorical structure. Flathead studies include Snow & Molgaard 1978, Smith 1991, S. Thomason & Everett 1993, Flemming et al. 1994, L. Thomason 1994, S. Thomason et al. 1994, and S. Thomason 1996, 1997a.

Coeur d'Alene is spoken in northern Idaho by less than a handful of speakers (Ivy Doak p.c. 1966). A grammar is in Reichard 1938 and stem list in 1939. A language course is in Nicodemus 1975a and a short grammatical sketch and dictionary are in Nicodemus 1975b. Lawrence Nicodemus, a speaker, has worked with most linguists studying the language, including Boas, Reichard, Sloat, Johnson, G. Palmer, and Doak. The phonology, which has a number of special features including pharyngealization and vowel harmony, has received attention in Sloat 1966, 1967, 1968, 1971a,b, 1972, 1980, Johnson 1975, and Doak 1990. Aspects of grammar are discussed in Reichard 1945b, 1947, Harris 1974, Doak 1993, 1996, semantics in Palmer & Nicodemus 1985 and Palmer 1990, and rhetorical structure in Doak 1991.

Columbian was spoken earlier along the middle Columbia River in Washington, but the remaining speakers, numbering under 40, now live on the Colville reservation (Kinkade et al. forthcoming). A wordlist is in Krueger 1967a, anatomical terms in Kinkade 1975b, and short dictionary in Kinkade 1981b. A text is in Kinkade 1978. Kinkade has also discussed reduplication (1982a), deictics (1967d), position indicators (1974), lexical suffixes (1973b), benefactives (1976b, 1980), transitives (1982a), inchoatives (1989c), and a 'non-perfective' (1983c). Czaykowska(-Higgins) has discussed retraction (1990), cyclicity and stress (1989, 1991, 1993a), reduplication (1993b), lexical suffixes (1982), and morphology (1996, 1998). Syllable structure is discussed in Czaykowska-Higgins & Willett 1997. Laryngeals in the Interior languages are discussed in Bessell & Czaykowska-Higgins 1992, vowels in Kinkade & Sloat 1972, stress in Idsardi 1991b, 1992, and particles in Kinkade 1981b.

The Salishan family offers numerous features of interest. In addition to the large inventories of consonants, there are complex syllable structures (Bagemihl 1991): Bella Coola *nm̓ɬxaɬ* 'one's feet are getting numb', *mn̓mn̓ts* 'children', *kʷm̓ɬ* 'firewood' (Nater 1984: 8-9). The Interior languages show pharyngeals; Halkomelem, Comox, and Straits have developed an interdental *θ* series; and Upriver Halkomelem has developed tone; while Tillamook has lost the labial series (**p* > *h*, **m* > *w*), and Twana and Lushootseed have lost their nasals (Thompson & Thompson 1972, N. Thompson 1993, Kinkade 1985b). Coeur d'Alene and Kalispel-Flathead-Spokane show vowel harmony triggered by uvulars and pharyngeals (Kinkade 1967a, Sloat 1972, Bessell 1992, 1993, 1994, 1998, Doak 1992, Bessell & Czaykowska-Higgins 1993, Orser 1993). Most of the languages show at least three kinds of reduplication: a C_1VC_2- distributive/plural/iterative which copies the first two consonants of the root, a C_1(V)- diminutive, intensive, or frequentative prefix, and a C_2- prefix 'suddenly, by accident' (Sapir 1915d, Haeberlin 1918, Hess 1966, Newman 1971, Galloway 1973, Kuipers 1974b, Nater 1989, van Eijk 1981b, 1990, 1993, Kinkade 1982a, 1985a, Bell 1983, Broselow 1983, Broselow & McCarthy 1983, Bates 1986, Kroeber 1988, Carlson 1989, Montler 1989, Carlson & Bates 1990, 1992, 1998, Bagemihl 1991, Kirkham 1991, Czaykowska-Higgins 1993b, Jimmie 1994, Urbanczyk 1996a, A. Mattina & Peterson 1997). Apparent metathesis in Straits, which distinguishes realis and irrealis in Klallam, and prevents stress-assignment to schwa in Saanich, is discussed in Thompson & Thompson 1969 and Montler 1986: 118, 1989a.

An issue that has prompted considerable discussion is whether the languages show a distinction between nouns and verbs (Kuipers 1968, Kinkade 1983a, Hess & van Eijk 1986, Jelinek & Demers 1994, Beck 1995b, Demirdache & Matthewson 1995, N. Mattina 1996). The distinction between roots and affixes is also interesting. While roots have the meanings one might expect of roots (Bella Coola *k̓im* 'look for', *k̓lat* 'steelhead trout'), and many affixes show typical affix-like functions (*-i* DIMINUTIVE), each language has a set of as many as 100-150 'lexical suffixes' with meanings more typical of roots: Bella Coola *-ali·c* 'tongue', *-ɬp* 'tree', *-k̓mt* 'day' (Pidgeon 1970, Davis & Saunders 1972, 1973, Kinkade 1973a, Saunders & Davis 1975a,b, Hagège 1978, Czaykowska 1982, Carlson 1990, Czaykowska-Higgins et al. 1996, Gerdts & Hinkson 1996, Hinkson & Norwood 1997). Their origins are discussed in Mithun 1997b and Kinkade 1998. Determiners and quantificational strategies are discussed in Matthewson 1996. Roots including specification of number are described in Kinkade 1981d. Transitivity is elaborately marked in Salish, and the importance of 'control' in the system was first pointed out by Thompson (1979c, 1985) and further discussed in Galloway 1978, 1997, Davis & Saunders 1980, Thompson & Thompson 1981, Carlson & Thompson 1982, Saunders & Davis 1982, Carlson & Bates 1990, van Eijk 1991b, Miller & Hilbert 1993, Carlson 1996, Demirdache 1996b, and Watanabe 1996.

Some of these structures can be illustrated with material from Saanich, a dialect of Northern Straits, described in Montler 1986. The language shows a typically rich consonant inventory, with series of plain stops *p, t, č, (k), kʷ, q, qʷ*, ejectives *p̓, t̓ᵇ, t̓, č̓, k̓ʷ, q̓, q̓ʷ, ʔ*, spirants *s, θ, ɬ, š, xʷ, x̱, x̱ʷ, h*, plain resonants *m, n, l, y, w, ŋ*, glottalized resonants *m̓, n̓, l̓, y̓, w̓, ŋ̓*, vowels *i, e, ə, a, (u)*, and contrastive length. (Sounds in parentheses occur only in recent loans from English and French through Chinook Jargon.) Syllable structure can be complex: *xʷq̓p̓ət* 'patch it'.

Two classes of words are recognized, full words, which contain roots, and particles, which are purely function words and cannot stand alone. Montler sees little basis for a distinction between nouns and verbs. Most roots can stand alone as predicates, but they more often appear with prefixation, suffixation, and/or other morphological processes. The root *t̓ᵇis* 'punch, pound', can stand alone as a predicate 'someone got punched', but can also appear with affixes, as in *xʷ-t̓ᵇis-as-ət-ɸ* LOCATIVE-punch-face-CONTROL.TRANSITIVE-3.OBJECT = *xʷt̓ᵇsást* 'punch him in the face'.

An important prefix, with cognates all through Salishan, is the nominalizer *s-*. Montler notes that it need not change the lexical category of stems; stems with and without it can serve as arguments or as predicates, taking voice, person, and aspect morphology. The prefix functions semantically to 'convert a form that refers to a process into one that refers to an entity'. Some roots never appear without it: *s-wáy̓qəʔ* 'man; it's a man'. The same prefix appears with subordinate clauses whose subjects are indicated by possessive pronominals.

A prefix that often shows the same shape is the *əs-* stative: *s-lét̓ᵇəɬ* 'it's full'. Another prefix *xʷ-* is a locative, indicating that the situation involves a particular location: *xʷ-čx̱ʷ-ás-s-əs* LOCATIVE-spit-face-1OBJECT-3SUBJECT = 'he spat on my face'. The mutative *tx̱ʷ-* indicates a gradual change of state: *tx̱ʷ-stéqəʔ sən* MUTATIVE-NOMINALIZER-bruise I = 'I got a bruise'. (The root *téqəʔ* also means 'salalberry'.) The prefix *č-* means 'have': *č-télə sən* have-money I = 'I have some money'. (The root *téllə* is a loan from English *dollar*.) The same prefix appears with action roots: *č-qéčəʔ tsə x̱éš-en* have-catch DEM trap-INST = 'The trap caught it.' Additional prefixes are *šxʷ-* 'reason for', *čəm̓-* 'time of', *šxʷ-* 'functioning as', *nə-* 'basic color', *čə-* 'alone', and *ɬ-* 'partake'.

Among the suffixes is a resultative aspect *-i* which converts roots like 'figure out' to 'know'; 'look at' to 'watch'; and 'take' to 'hold'. There is also a durative *-əɬ*, an unproductive stative *-t*, a directional *-il* (*x̱̓č-il̓-əŋ* deep/under/below-DIR-3 'it sank'), a directionless *-asəŋ̓* (*šə-št-əŋ̓-ásəŋ̓* DIM-walk-CONTROL.MIDDLE-DIRECTIONLESS 'wander'), a desiderative *-eləŋ* (*čč-é l̓ŋəŋ* work-DESIDERATIVE 'want to work'), instrumental *-(t)ən* (*š-máy̓-əs-tən* LOCATIVE-point-face-INST 'harpoon'), habitual *-nəq*, and *-əl̓* 'modified color'.

Of special interest is the large set of lexical suffixes, with meanings like 'person', 'animal', 'leg', 'fire', 'hand', 'canoe', 'inside surface', 'mind, emotion', 'clothing', 'container', 'wave', 'eye', 'fish', 'blanket', 'appearance', 'arrow, angle', 'ground, floor',

'smell', 'dollar', 'building', and more. Their meanings, which often double those of roots, range from concrete to quite abstract: *x^{w}-ɬə́m-él-ə̱qsən sən* LOCATIVE-hit-CONNECTOR-nose I 'I got hit on the nose'; *ʔíl-ə̱qsən* land-protrusion 'point of land'. They also vary widely in productivity and may cooccur within a word.

There is also a set of non-concatenative processes, including reduplication, infixation, ablaut, stress shift, metathesis, and glottalization, which contribute such meanings as diminutive, collective, distributive, repetitive, continuative, characteristic, and resultative. There are six reduplicative patterns, all affecting only the root.

The form of person marking varies across the family. Saanich has four paradigms of person markers: predicative, possessive, objective, and subjective. The predicative forms are independent roots: *ʔə́sə̱ χéʔeɬs* 'I am Transformer'. The possessives include prefixes for first singular and second persons but suffixes for first plural and third persons: *nə̱-tén* 'it's my mother'. Objectives are suffixes: *k̓^{w}ənná-nə̱ sən* 'I see you'. Subjectives include a suffix for third person ergative (subject of transitive) (*k̓^{w}ə́nəs-ə̱s* 'he looked at me'), and all three persons in certain subordinate clauses, but clitics for first and second persons in main clauses: *ʔəɬ^{b}íŋəstx^{w} sən* 'I dressed him', *ʔəɬ^{b}íŋəstx^{w} sx^{w}* 'you dressed him'. Plurality is obligatorily marked only for first: *ʔəɬ^{b}íŋəstx^{w} ɬtə* 'we dressed him', but *ʔəɬ^{b}əŋíst-ə̱s* 'he/she/they dressed him'.

Voice or argument structure is elaborately specified in Salishan languages. A pervasive element of the system is the distinction of control, the conscious control of a participant over the activity at hand. Montler points out that the distinction is not simple volition. The sentence *nəq-náŋət sən* 'sleep-NON.CONTROL.MIDDLE I' was translated two different ways on different occasions: 'I finally managed to fall asleep (after tossing and turning for hours trying to get to sleep)' and 'I fell asleep (accidentally while driving).' The first is volitional and the second is not. Transitive suffixes include the control transitive *-ət*, non-control transitive *-nax^{w}*, causative *-stax^{w}*, purposive *-nəs*, benefactive ('indirective') *-si* (yielding ditransitives), benefactive ('relational') *-ŋiy* (yielding transitives). Intransitive suffixes include an agentive *-əlaʔ*, control middle *-əŋ*, non-control middle *-naŋət*, passive *-əŋ*, control reciprocal *-tal*, non-control reciprocal *-nəwel*, and reflexive *-sat*.

There are three classes of particles/clitics: proclitics on predicates that indicate aspect, enclitics on predicates that indicate the pragmatic setting of the speech act, and demonstratives. There are in addition a subordinator and oblique case marker. Most of the 21 demonstratives may function as either determiners (articles) or pronouns. Meaningful components can be discerned within them specifying such distinctions as invisible/remote, visible, particular feminine individual, particular individual person/thing/class, and at/toward/from a place.

The passage below is from a text 'Raven abandons his son', told by Mrs. Elsie Claxton and analyzed by Montler (1986: 242-61). (NM stands for NOMINALIZER.)

mə́k̓^{w}	*k^{w}əčɨ̓l*	*ʔi*	*əẃ*	*k̓^{w}əẃə́yk̓^{w}*	*tsə*	*s-páal̓*
every	day	accompanying	CONT	fishing	DEM	NOMINALIZER-raven

'Every morning he'd go out fishing, the Raven.

ŋə́n̓	*tsə*	*ŋən-ŋə́nəʔ-s*	*tsəẃnɨ́ɬ*	*s-páal̓*
many	DEM	PL-child-3POSSESSIVE	he	NOMINALIZER-raven

Raven had lots of children.

k̓^{w}é-k̓^{w}iʔ.	*k̓^{w}é-k̓^{w}iʔ*	*ʔal̓*	*ʔə́wə-nəʔ*	*s-téŋ*	*s-ʔíɬən-s.*
REALIS-hungry	REALIS-hungry	limiting	not-exist	NM-what	NM-eat-3POSS

They were hungry. They were hungry but they didn't have any food.

nə́t^{b}əʔ	*s-k^{w}éčəl*	*ʔiʔ*	*ʔəχ^{w}i-t-əs*	*ʔe*	*tsə*	*s-nə́x^{w}əɬ*	*tsə*	*mén-s.*
one	NM-day	ACC	sweep-CTR.TR-3OBJ-3SUBJ	OBL	DEM	NM-canoe	DEM	father-3POSS

One day his son was sweeping his father's canoe.

ʔəχ^{w}i-t-əs	*tsə*	*s-nə́x^{w}əɬ*	*tsə*	*mén-s*
sweep-CONTROL.TR-3OBJECT-3SUBJECT	DEM	NM-canoe	DEM	father-3POSS

He was sweeping his father's canoe

ʔiʔ	*k^{w}ɬ*	*θíl̓əč*	*ʔe*	*tsə*	*s-q̓ə́l-əɬ.*
accompanying	REALIS	find	OBLIQUE	DEM	STATIVE-barbecue-DURATIVE

and he found cooked fish.

s-əẃ	*tal̓-nəx^{w}*	*k^{w}*	*s-əẃ*
NOMINALIZER-CONTEMP	discover-NON.CTR.TR-3OBJ	SUBORDINATOR	NOMINALIZER-CONTEMP

He found out that

ʔəɬə́n̓-s	*tsə*	*mén-s*	*ʔə*	*k^{w}síʔe*	*s-héẃe.*
EAT-3POSS	DEM	father-3POSS	OBLIQUE	DEM	NOMINALIZER-away

his father eats while he's away.

s-əẃ	*tal̓-nəx^{w}*	*k^{w}*	*s-əẃ*
NOMINALIZER-CONTEMP	discover-NON.CTR.TR-3OBJ	SUBORDINATOR	NOMINALIZER-CONTEMP

He found out that

ʔəɬə́n̓-s	*tsə*	*mén-s*	*ʔə*	*k^{w}síʔe*	*s-k̓^{w}əẃə́yk̓^{w}.*
eat-3POSS	DEM	father-3POSS	OBLIQUE	DEM	NOMINALIZER-fishing

his father ate while he was fishing.'

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There are three classes of particles/clitics: proclitics on predicates that indicate aspect, enclitics on predicates that indicate the pragmatic setting of the speech act, and demonstratives. There are in addition a subordinator and oblique case marker. Most of the 21 demonstratives may function as either determiners (articles) or pronouns. Meaningful components can be discerned within them specifying such distinctions as invisible/remote, visible, particular feminine individual, particular individual person/thing/class, and at/toward/from a place.

The passage below is from a text 'Raven abandons his son', told by Mrs. Elsie Claxton and analyzed by Montler (1986: 242-61). (NM stands for NOMINALIZER.)

mə́k^{w} k^{w}əčɨ́l ʔi əẃ k^{w}əẃə́yk^{w} tsə s-páal.
every day accompanying CONT fishing DEM NOMINALIZER-raven
'Every morning he'd go out fishing, the Raven.

ŋə́n tsə ŋən-ŋə́nəʔ-s tsəwníɬ s-páal.
many DEM PL-child-3POSSESSIVE he NOMINALIZER-raven
Raven had lots of children.

k^{w}é-k^{w}iʔ. k^{w}é-k^{w}iʔ ʔal ʔə́wə-nəʔ s-téŋ s-ʔíɬən-s.
REALIS-hungry REALIS-hungry limiting not-exist NM-what NM-eat-3POSS
They were hungry. They were hungry but they didn't have any food.

nə́ṫ^{b}əʔ s-k^{w}éčəl ʔiʔ ʔəx^{w}í-t-əs ʔe tsə s-nə́x^{w}əɬ tsə mén-s.
one NM-day ACC sweep-CTR.TR-3OBJ-3SUBJ OBL DEM NM-canoe DEM father-3POSS
One day his son was sweeping his father's canoe.

ʔəx^{w}í-t-əs tsə s-nə́x^{w}əɬ tsə mén-s
sweep-CONTROL.TR-3OBJECT-3SUBJECT DEM NM-canoe DEM father-3POSS
He was sweeping his father's canoe

ʔiʔ k^{w}ɬ θíɬəč ʔe tsə s-q̓ál-əɬ.
accompanying REALIS find OBLIQUE DEM STATIVE-barbecue-DURATIVE
and he found cooked fish.

s-əẃ tal-nax^{w} k^{w} s-əẃ
NOMINALIZER-CONTEMP discover-NON.CTR.TR-3OBJ SUBORDINATOR NOMINALIZER-CONTEMP
He found out that

ʔíʔłəń-s tsə mén-s ʔə k^{w}síʔe s-héwe.
EAT-3POSS DEM father-3POSS OBLIQUE DEM NOMINALIZER-away
his father eats while he's away.

s-əẃ tal-nax^{w} k^{w} s-əẃ
NOMINALIZER-CONTEMP discover-NON.CTR.TR-3OBJ SUBORDINATOR NOMINALIZER-CONTEMP
He found out that

ʔíʔłəń-s tsə mén-s ʔə k^{w}síʔe s-k^{w}əẃə́yk^{w}.
eat-3POSS DEM father-3POSS OBLIQUE DEM NOMINALIZER-fishing
his father ate while he was fishing.'

SHASTAN = SASTEAN FAMILY

Shasta = Shastika = Shasta proper: *Oregon, Klamath River, Scotts Valley = Iru·ʔáycu, Shasta Valley = Ahútireʔé·cu = Watiru, Kammatwa**
Okwanuchu*
New River Shasta*
Konomihu*

The Shastan languages are indigenous to northern California, with Shasta proper extending into southern Oregon. It is unclear how many dialects there originally were of Shasta proper. Okwanuchu may be a dialect of Shasta. These may in turn be more closely related to New River Shasta than to Konomihu. The status of Konomihu was in doubt for a period due to an intriguing conflict among sources (Dixon 1905, 1907, 1931, Merriam 1930, Silver 1980, Larsson 1987). In 1905 and 1906 Dixon linked the Shastan languages with Palaihnihan, but Bright (1954) and Olmsted (1956, 1957, 1959, 1964) found little evidence for such a grouping, although Haas (1963) did not dismiss the possibility. Dixon & Kroeber 1913 classified Shasta-Achomawi as part of the hypothesized Hokan stock. In 1980 Silver reported that perhaps three elderly Shasta speakers remained, two fluent.

The major published work on Shasta proper is a grammar in Silver 1966. Silver & Wicks 1977 contains a text collected by Dixon and reworked by Silver with Wicks, a Scotts Valley Shasta speaker. A vocabulary is in Bright & Olmsted. Material on the other dialects and languages is limited to wordlists, with a few phrases and sentences from Konomihu. Manuscripts by Gatschet, Curtin, de Angulo, Merriam, and Harrington are listed in Silver 1966 and 1980. Material cited here is Shasta from Silver 1966.

The phonological inventory contains plain and ejective obstruents *p, t, c, č, k; p̓, t̓, c̓, č̓, k̓, ʔ*; spirants *s, x, h*; and resonants *m, n, w, r, y*. There is a four-vowel system: *i e a u*. Length is distinctive for both consonants and vowels: *ʔát̓uʔ* 'nothing', *ʔát̓·uʔ* 'sunflower'; *ʔápsu* 'a pipe', *ʔá·psu* 'a dog'. Long obstruents contrast with sequences of two like obstruents: sequences of stops contain an internal release, and sequences of spirants are characterized by rearticulation. There are two contrastive level pitches, high (´), and low (unmarked): *kwáp·i·ma* 'he's throwing (it)', *kwap·í·ma* 'I threw (it)'. Morphophonemic processes include assimilation, non-apical consonant syncope between vowels, vowel contraction, and alternations in quantity or pitch.

Both verb and noun roots may be reduplicated: *párpar* 'skunk cabbage', *ehikhik̓·* 'to pant'. Both may be compound: *ahu-is·i* 'mouth-say' = 'talk'.

Substantives include nouns, locatives, numerals, pronouns, and deverbal nominals. They may be followed by case suffixes: vocative (primarily on kin terms) as in *ʔáč·uk-ú·* 'Sister!'; comitative as in *ʔán·itít·par* 'with her aunt'; instrumental as in *k̓e·hú·tiká·ta* 'with Indian money'; possessive as in *pá·stinít·tuʔ k̓áhus·ik* 'whiteman-POSS talk = 'English'; ablative as in *ʔač̓·áy-c·u čú·war* day-from luminary = 'sun'; temporal locative as in *k̓wísmis-í·ʔi* 'at Christmas', and spatial locatives as in *ʔipxa·na·-tuk* 'in the lake'. There is no inflectional number, but a collective suffix may be added to substantives referring to animates: *ʔúpitaktak-yá·war* 'a bunch of hounds'. A paucal diminutive suffix can be used for the young of animals: *ʔé·xa-xa·yxér* 'bear cubs'.

Verb morphology is rich. Many verb roots include indication of the number of actions or absolutive participants as part of their meanings: *-icma-* 'sleep (one)', *-i·wani-* 'sleep (collective)'. (*i* represents a vowel that alternates between *i* and *a*.) Verbs consist minimally of a prefix plus stem. Each prefix represents a mode-tense-person-number combination. Modes are hortative (urging), imperative (mandatory or prohibitory), volitional (intention), potential (ability or possibility), subjunctive (contingent), and declarative. Declaratives distinguish present, near past, remote past, undifferentiated tense, and interrogation/negation. Subjects may be first person, second person prohibitory, second person mandatory, second person undifferentiated, third person direct evidential, third person inferential, third person reportative, third person gerundial, third person passive, or third person undifferentiated. Number may be singular, plural, or undifferentiated. Examples of the prefixes can be seen with the verb *ahu-is·i* 'talk': *táhu·sáʔ* 'Let me talk!' (hortative first person singular), *čáhus·áʔ* 'Let us talk!' (hortative first person plural), *t̓áhus·áʔ* 'I'll talk' (volitional first person singular), *sáhus·aʔ* 'I might talk' (potential first person), *swáhus·i·k* 'I'm talking' (declarative first person singular present), *kwáhus·áʔ* 'I talked' (declarative first person singular near past), *p̓áhus·áʔ* 'I used to talk' (declarative first person singular remote past), *čís·antaʔ* 'he was told (or) he/they told him' (declarative third person passive). Interrogative/negative verbs appear either with the interrogative enclitic *=ya* for questions or with the negative adverb *ma·* 'not' for negation: *ti·háykya* 'Did he dream?', *má· ti·háyk* 'He didn't dream.'

Verb stems or themes consist of one, two, or three roots, optionally followed by suffixes. Some of the suffixes indicate sensory attributes: 'rigid', 'correct', 'mud', 'lacking motion or sound', 'unexpectedly, accidentally', 'black', 'careful', 'bright', 'yellow, green', 'sharp, prickly', 'with a sharp, quick sound': *ke·tikírkire·keʔ* 'You (collective) break the ice!' Some indicate kinds of motion: 'jerking', 'moving from one place to another', 'pressing, squeezing', 'whipping', 'upward', 'across a surface', 'up and down', 'motion involving a long, rigid object', 'motion involving a flexible object', 'steady pressure of arm', 'projection forward', 'with extension of arm or leg', 'iteratively', 'splitting', 'breaking a surface': *k̓úpit̓irik* 'he punched a hole through a thin shell'. Some suffixes indicate location or direction: 'away', 'across', 'downstream', 'out of a container', 'into a circumscribed area', 'in liquid', 'down in a space', up a hill', 'along the edge', 'through a circular/tubular space', 'down into', 'outward', or 'downward': *k̓úkawehémpik* 'he bowed his head' versus *kúkawehá·* 'Hold your head

down!' Some of the directional suffixes may cooccur: *kwáhu-hi·-hámpi-k* 'he puts mouth on body and sucks' ('into-outward').

A highly productive suffix is a transitive marker. Sometimes it functions as a clear causative: nontransitive *réhe·nuka?* 'he's running along on foot' versus transitive *réhe·nąyka?* 'he's going along on horseback'. Other times its meaning is less obvious. There are benefactive and reflexive suffixes as well. Other inner suffixes distinguish aspect: completive, iterative, collective momentaneous/inceptive (*kwéhiyawacwę·kę?* 'they are getting ready to move'), and collective durative/stative (*kwéhiyawacwą·kę?* 'they are all ready to move'). Following these may be a distributive suffix (*kwéhe·nuka·huru·ma* 'I jumped in the house with a container of individuated objects'), or a characteristic suffix (*?iatatac·ir* 'characteristic of pushing up and spreading out' = 'umbrella'). Finally, there are two additional sets of aspect suffixes: perfectives (momentaneous, momentaneous paucal, durative, and collective), and imperfectives (continuative, imperfective, progressive, and ambulative).

A set of enclitics may appear with various lexical classes. Among these are markers meaning 'nothing but, only', 'too, also', 'even', some emphatics, some demonstratives, and others. The demonstratives can link nominals as well as clauses.

Word order is pragmatically based: more newsworthy information appears early in the clause, followed by more predictable or peripheral information.

The lines below come from Silver and Wicks (1977: 123). Coyote had already been introduced, so he is referred to late in the first clause. Nominal suffixes can be seen on the first word in each line. The predicates at the end of each show the mode-tense-person prefixes and locative and aspect suffixes.

?axé·ki-·tu ?ám·a· i-uhuy-í·-ma *kwá·tak*
Pains-POSS house 3DECL.REM.PAST.REPORTATIVE-arrive-down.along-thither Coyote
'Coyote reached the Pains' house.

yáh·a-xé·r iw-ára·mak-a·k-e.
child-DIM.PL 3DECL.REM.PAST.REPORTATIVE-be.at.home-COLLECTIVE.DURATIVE-PRF.COLLECTIVE
The children were at home.

yú·maxa-yâ·r iw-é·?a-·ma
adult-COLLECTIVE 3DECL.REMOTE.PAST.REPORTATIVE-several.hunt-CONTINUATIVE
The adults were out hunting food,

i-úw-ar-ahá·-?ay-k.
3DECL.REMOTE.PAST.REP-set.fire-extend.linearly.up.along.hill-in.circle-PRF.MOMENTANEOUS
setting fire to drive deer.'

SIOUAN-CATAWBAN FAMILY

SIOUAN = WESTERN SIOUAN
- MISSOURI RIVER SIOUAN
  - **Crow = Apsaroka = Apsaloka = Upsaroka**
  - **Hidatsa = Gros Ventre = Minitari = Minnetaree**
- **Mandan**
- MISSISSIPPI VALLEY SIOUAN
  - DAKOTAN
    - **Sioux:** *Teton = Lak(h)ota, Santee-Sisseton =Dakota, Yankton-Yanktonai*
    - **Assiniboin(e)**
    - **Stoney=Alberta Assiniboine**
  - WINNEBAGO-CHIWERE
    - **Winnebago = Hocák = Hochunk = Hochank = Ho(t)cangara**
    - **Chiwere:** *Ioway = Iowa, Otoe = Oto - Missouria = Missouri*
  - DHEGIHA = ȻEGIHA
    - **Omaha - Ponca = Ponka**
    - **Kansa = Kaw*, Osage**
    - **Quapaw = Kwapa(w) = Arkansas***
- SOUTHEASTERN SIOUAN = OHIO VALLEY
  - **Tutelo, Saponi = Saponey***
  - OFO-BILOXI*
    - **Ofo = Ofogoula**
    - **Biloxi**

CATAWBAN = EASTERN SIOUAN*
- **Woccon = Waccon = Wacon**
- **Catawba**

The Siouan languages were centered at contact on the prairies, extending from modern Alberta and Saskatchewan south into Montana, the Dakotas, Minnesota and Wisconsin, through Nebraska, Iowa, Missouri and Kansas, down into Arkansas and Mississippi. Other Siouan languages were spoken in the Carolinas and Virginia. A bibliography of work on the Siouan languages through the late 19th century is in Pilling 1887a. Overviews of the family are in Chafe 1973, 1976 and Rankin forthcoming a. Other helpful works survey the languages of the Plains (Hollow & Parks 1980) and those of the Southeast (Crawford 1975 and Booker 1991).

The family schema above is from Robert Rankin (p.c. 1992), a refinement of the subgrouping established in Voegelin 1941a. The precise position of Mandan is unclear, due in part to long contact with Hidatsa. In accord with Riggs 1852, Dakotan was long viewed as consisting of three or four major dialects, referred to as Lakhota

(Teton), Dakota (Santee and Yankton), and Nakota (Yanktonai and Assiniboine), according to their reflex of a voiced alveolar. Recent work by Parks, DeMallie, & Taylor (1992) however, indicates that the *l/d/n* criterion is problematic and inadequate. A five-way distinction among Teton, Santee-Sisseton, Yankton-Yanktonai, Assiniboine, and Stoney now seems more accurate. The Sioux dialects, Assiniboine, and Stoney are not immediately mutually intelligible. Winnebago and Chiwere are more closely related to Dhegiha than to Dakotan. Wolff (1952: 63) reported that Osage speakers considered Kansa completely intelligible, Omaha and Ponca barely intelligible, and Quapaw completely unintelligible. Additional languages mentioned in historical accounts have been posited as Siouan, among them Moneton or Moniton, Nahyssan, and Occaneechi, said to be mutually intelligible with Tutelo and Saponi, but they are not attested. Occaneechi may have been a pidgin used as a lingua franca. The term 'Siouan' is used by some scholars to include all languages listed above except those of the Catawban group, but by others to include Catawban as well. A survey of comparative work on the Siouan family is Rood 1979. The earliest work is a comparative phonology of Dakota, Winnebago, Chiwere, and Dhegiha in Dorsey 1885. More recent work includes Wolff 1950-1, Matthews 1958, 1959, 1970, Taylor 1976, and Rankin 1977. There is evidence of a distant genetic relationship between Siouan-Catawba and Yuchi, and of an even more remote link with Caddoan and Iroquoian (Allen 1931, Chafe 1964, 1976, Rudes 1974).

Crow is now spoken by 4,000-5,000 people, including some children, in southern Montana (Graczyk 1991). Major works on the language include discussions of tone in Kashube 1954, Hamp 1958, Matthews 1959b, and Gordon 1972, and Kim 1996; grammatical descriptions in Lowie 1941, Kashube 1967, Matthews 1981, Graczyk 1991, and Wallace 1993; texts in Lowie 1930a, 1941, 1960a, and Kashube 1978; and wordlists in Lowie 1960b and Medicine Horse 1987. Bradshaw 1989 discusses negation, Lowie 1914 word play, Voegelin & Robinett 1954 motherese, and Read 1978 language maintenance. Voegelin 1941b and Pierce 1954 compare Crow with Hidatsa.

Hidatsa or Gros Ventre is spoken by over 100 speakers living with the Mandan and Arikara along the Missouri River on the Fort Berthold reservation in western North Dakota (Rankin p.c. 1986 from Wesley Jones). Major published sources include a grammar and dictionary in Matthews 1873-4 and 1877; grammatical sketch in Robinett 1955; formal description of syntax in Matthews 1965; texts in Harris & Voegelin 1939; and discussions of pitch, accent, and stress in Bowers 1996. Jones 1979 discusses a locative/demonstrative/relative suffix.

Mandan is spoken by at least 15 people around Twin Buttes and Mandaree on the Fort Berthold reservation and the adjacent New Town and Parshall areas, in western North Dakota (Douglas Parks p.c. 1992). Kennard (1936: 2) noted that all Mandan speakers at that time also spoke Hidatsa. Major published sources include a 700-word

vocabulary with grammatical notes in Will & Spinden 1906, texts in Lowie 1913, Parks et al. 1978, Coberly 1979, and Carter 1991, a grammatical sketch with text in Kennard 1936, and dictionary with phonological sketch and affix list in Hollow 1970a. Wolvengrey 1990 discusses a focus marker and Mixco 1997 argues for the existence of a switch-reference system.

At present there are perhaps 11,000 Dakotan speakers including children in North and South Dakota, Nebraska, Minnesota, Montana, Manitoba, Saskatchewan, and Alberta, many in multi-dialectal or multi-lingual communities. Of these, perhaps 6000-7,000 are Lakhota (David Rood p.c. 1992). Yankton is spoken in southeastern South Dakota, and Yanktonai at Crow Creek in South Dakota, Standing Rock and Devil's Lake in North Dakota, Fort Peck in northeastern Montana, at Oak Lake in Manitoba, and at Standing Buffalo, Moose Woods, and Round Plain in Saskatchewan. There are about 250 Yankton and Yanktonais speakers in all (Parks p.c. 1992). Assiniboine is spoken by around 300 primarily at the Fort Belknap and Fort Peck reservations in Montana, and at the White Bear, Carry The Kettle, and Mosquito-Grizzly Bear's Head, and Cypress Hills reserves in Saskatchewan (Parks p.c. 1992). Stoney, the most divergent of the Dakotan group, is spoken in Alberta by the Morley, Paul, and Alexis bands and is still learned by children (Allan Taylor p.c. 1992).

There is a rich linguistic literature on Dakotan, especially on the Sioux dialects. Early major works were a Santee dictionary and a grammar with texts by Riggs (1852, 1890, 1893) and a dictionary in Williamson 1902. Useful guides to 20th century sources on Lakhota are in de Reuse 1987, 1994a with addenda in 1990. Among the many published works on Lakhota are a grammatical sketch in Boas & Swanton 1911; extensive grammars in Boas & Deloria 1941, Buechel 1939, and Rood & Taylor 1996; a teaching grammar in Rood & Taylor 1976a; an extensive text collection in Deloria 1932 with additional texts in Deloria 1954, Hairy Shirt et al. 1973; and dictionaries in Buechel 1970 and Rood & Taylor 1976b. There are discussions of phonology in Matthews 1955, Carter 1974, Chambers 1978, Shaw 1978, 1985a, 1989, and Chambers & Shaw 1980; of phonology and morphology in Shaw 1980 and Patterson 1990; of incorporation in de Reuse 1994b; of switch reference in Dahlstrom 1982 and Lungstrum 1995; of case in Williamson 1979 and Mithun 1991; syntax in Van Valin 1977, 1987 and Williamson 1984; boundary markers in discourse in Stark 1962, and 'men's and women's' language in Trechter 1995. Assiniboine phonology is treated in Hollow 1970b, a grammatical sketch is in Levin 1964, and Assiniboine and Stoney texts are in Lowie 1909: 263-70, 1960c. Stoney phonology and morphology are described in Bellam 1975, and developing penultimate and ultimate stress in Shaw 1985b.

Winnebago or Hochank is spoken in central Wisconsin and northeastern Nebraska. Hollow & Parks counted 2000 speakers in 1980, but Valdis Zeps found only 250 in 1995 (SIL 1996). Published sources include a grammatical sketch with text in Lipkind

1945; dictionaries in Marino 1968 (from Radin's materials) and Johnson & Thorud 1976; and texts in Boas & Swanton 1911: 959-65 (by Radin), Radin 1923, 1949, 1950, Sebeok 1947, and Miner 1982. Susman 1941 discusses word play and Marten 1964 morphophonemics. An accent shift to the right, and its interaction with a vowel-copying innovation known as Dorsey's Law, have occasioned considerable discussion (Susman 1943, Miner 1979b, 1981b, 1989, Hale & White Eagle 1980, Hale 1985). White Eagle (1982, 1983) devised lessons in spoken Winnebago with the goal of teaching the method of scientific inquiry through linguistics. Danker 1985 presents texts by Felix White with analysis of their structure and style.

Chiwere, consisting of Missouria, Otoe, and Ioway, is now spoken in central Oklahoma, between Red Rock and Shawnee. The Missouria were first encountered in Missouri, the Otoe in Nebraska and Iowa, and the Ioway in Iowa. At the end of the 18th century the Missouria joined the Otoe, so there is no longer a distinct Missouria dialect. The last fluent speaker, Otoe Truman Dailey, died in 1996. There are perhaps a dozen Ioway speakers, half of them fluent (Jill Hopkins, Jimm Good Tracks p.c.). In addition to early wordlists, there is a grammar in Hamilton & Irwin 1848, a brief text in Dorsey 1880, a grammatical sketch in Whitman 1947, a discussion of spatial deixis in Hopkins 1990, and a dictionary in Good Tracks 1992.

Among the Dhegiha group, the Ponca and Omaha were first encountered on the Missouri River in Nebraska. Ponca is now spoken by perhaps two dozen mostly in Oklahoma, and the nearly identical Omaha by around 70 in northeastern Nebraska around Macy, near the Missouri River (Catherine Rudin p.c. 1992). Holmer's 1945 phonological description is now outdated. Boas 1907 and Boas & Swanton 1911 contain remarks on Ponca grammar. Omaha and Ponca texts are in Dorsey 1879-80, 1881, and especially 1890. There is a vocabulary in Swetland 1977.

The Kansa were first seen on the Kansas River in present Kansas. The last Kansa speaker died in the early 1980s (Robert Rankin p.c.). Vocabulary is in Dorsey 1885.

The Osage lived at contact along the Osage River in modern Missouri and during most of the 19th century in southeastern Kansas. Since the 1870s they have lived primarily in northeastern Oklahoma. The language is now spoken fluently by a handful of elders, all over age 65 (Quintero 1997: 4). There are texts in Dorsey 1988, a dictionary with texts by La Flesche, an Omaha-Ponca speaker (1932), description of morphology in Wolff 1958, and a phonology and verbal morphology in Quintero 1997. (A phonological analysis in Wolff 1952 is problematic.)

Quapaw was last spoken fluently in the early 1970's in Oklahoma (Rankin p.c. 1992). Dorsey collected extensive vocabulary and textual material in the 1880s, but it remains unpublished in the AN. Siebert 1989 provides data from several days' fieldwork in Oklahoma in 1940. Rankin, the last to work with the language, provides a vocabulary (1982), discussion of phonology in language obsolescence (1978), and a sketch (forthcoming b). Rankin 1988 presents grammatical material from Quapaw, Kansa, and Omaha-Ponca illustrating their genetic affinity and examining contact phenomena in the Southeast. The Dhegiha languages are distinguished by the development of classificatory definite articles from positional verbs (Rankin 1977).

Biloxi and Ofo were first observed in Mississippi, Biloxi along the lower Pascagoula River and Ofo along the Yazoo. Both were last spoken during the first half of the 20th century. Biloxi was recorded by Gatschet in 1886, then more extensive work was done by Dorsey in 1892 and 1893. Dorsey 1894 contains a grammatical sketch and text. After Dorsey's death, Swanton organized his material and published a dictionary plus sentences and 31 texts (Dorsey & Swanton 1912). In 1934, Haas and Swadesh collected 54 Biloxi words in Texas from Emma Jackson, then 87 years of age. These words appear in Haas 1968b with comparable forms from Ofo and Tutelo. A grammar based on all sources is in Einaudi 1976. In a useful review of the grammar, Rankin (1986) notes features in the language attributable to contact in the Southeast. Ofo is known from the speech of Rosa Pierrette, who lived among the Tunica in Louisiana, recorded by Swanton (1909a). Swanton published an Ofo dictionary with Dorsey's Biloxi (Dorsey & Swanton 1912) and on the basis of this material, Voegelin found Ofo-Biloxi sound correspondences (1939), and Haas 1975 and de Reuse 1981 discuss Ofo deaspiration. Haas 1969c provides a guide to the dictionaries.

The Tutelo, first encountered in the 17th century in western Virginia, moved north, following the Tuscarora, after wars with colonists. In 1753 they joined the Iroquois confederacy under the sponsorship of the Cayuga, and ultimately settled at the Six Nations reserve in southern Ontario. A grammatical sketch of Tutelo with vocabulary is in Hale 1883a, along with a demonstration of its Siouan affiliation. A few additional words were recorded in 1907 by Frachtenberg (1913b) and in 1911 by Sapir (1913b). In 1982 Mithun tape-recorded some of the vocabulary from Albert Green. Although Tutelo was his mother tongue, he had not used it for a long time and could supply no new material, but his pronunciation showed the persistence of aspirated and glottalized stops noted by Sapir. Discussion of Tutelo nouns is in Oliverio 1992, numerals in Oliverio 1993, and motion verbs in Oliverio 1996a. A major work on the language, based on all extant sources, is a grammar and dictionary in Oliverio 1996b.

Saponi is known from a list of 46 words recorded in 1716 by Fontaine (Alexander 1971). Although most numbers listed are Algonquian, 23 words closely resemble Tutelo (Goddard 1972c). Hale's Tutelo consultant reported in 1870 that the Saponi and Tutelo could understand one another. Occanneechi may have been a Tutelo-based jargon. Voegelin (1941a) argues for the subgrouping of Biloxi, Ofo, and Tutelo into what he termed Ohio Valley Siouan.

More distantly related to the Siouan group as a whole are the Catawban languages. As pointed out by Swanton 1936 and others since, the Catawban languages show no

closer relationship to the Southeastern Siouan languages than to other Siouan languages, although they were spoken in neighboring areas. Woccon, once spoken in North Carolina, is known only through a list of 143 words printed in Lawson 1709. After their defeat by the neighboring Tuscarora in 1713, they were never mentioned again. A relationship between Woccon and Catawba was first suggested by Adelung & Vater in 1816. A good resource on the language is Carter 1980, which contains a history of scholarship, 34 Woccon-Catawba lexical resemblances, Woccon-Siouan resemblances, and phonological correspondences with other Siouan languages, Iroquoian, Caddoan, and Yuchi. Carter shows that the Woccon and Catawba were separate but genetically related languages, sharing morphological and lexical innovations not found elsewhere in Siouan, but that Woccon contains a number of Siouan cognates not found in Catawba.

Catawba was last spoken fluently in the mid-20th century near the Catawba River around Rock Hill in northern South Carolina. A distant relationship to the Siouan languages was first suggested by Morgan in 1870 and demonstrated by Siebert in 1945 on the basis of resemblances in instrumental and pronominal prefixes and modal suffixes. Other published material on the language includes words in Barton 1798 and material collected by Miller in Gallatin 1836, 1848; words, paradigms, phrases, and sentences in Lieber 1858; grammatical notes in Gatschet 1900; a morphological sketch with lexicon in Voorhis 1984; and texts in Speck 1913, especially 1934, 1946, and Matthews & Red Thunder Cloud 1967. (The source of the 1967 data has been called into question.) Grimm 1987 compares Catawba with Biloxi, Mandan, and Dakota lexicostatistically.

The Siouan languages are known for a number of structural features, due in part to the accessibility of Lakhota material. Examples cited below are Lakhota from Boas and Deloria 1939. Their transcription is retained with some Americanist substitution of symbols: *š* for *ś*, *ž* for *ź*, *x* for *ȟ*, *γ* for *ǧ*, and *ʰ* for *ʻ* (aspiration).

Many though not all of the Siouan languages distinguish plain, aspirated, and ejective stops, although earlier sources have not always noted aspiration reliably. There are typically full series of voiceless fricatives, two nasals, an alveolar that appears variably as *l, d, r,* or *n*, and two glides. Most of the languages contain five oral and three nasal vowels, and most have distinctive vowel length. Lakhota contains stops *p, t, k; pʰ, tʰ, kʰ; p̓, t̓, k̓; (ʔ); b, g;* affricates *č, čʰ, č̓;* fricatives *s, š, x, h, z, ž, γ;* resonants *l; m, n; w, y;* oral vowels *i, e, a, o, u;* and nasal vowels *į, ǫ, ų*. Lakhota stress falls basically on the second syllable, although a number of phonological processes have interacted with stress assignment. Adjacent vowels often contract. There are remnants of sound symbolism whereby the point of articulation of fricatives indicates intensity: *suza* 'it has a slight bruise, a single crack in a bone', *šuža* 'it is badly bruised, flesh and bone are crushed together', *xuγa* 'a hard round shell (egg, skull) is fractured'.

Both noun and verb stems are compounded productively. Nouns are compounded with nouns or verbs to yield new nouns: *čʰǫ-há* 'wood-skin' = 'bark', *wa-sų́e* 'boat-tail' = 'rudder', *hǫ-wákʰǫ* 'night-be.holy' = 'northern lights'. Nouns are compounded with verbs to yield new verbs: *pte-ʔátųwǫ* 'buffalo-seek' = 'to scout for buffalo', *maká-ʔoǩa* 'skunk-dig' = 'to dig skunks'. Verbs may also be compounded: *ʔų́štįma-màni* 'sleep-walk' = 'to walk in one's sleep'. In many cases contracted forms of roots appear in compounds: *hoγǫ́* 'fish', *ho-yúze* 'to lift fish out of the water'.

Noun roots may stand alone as words, unmarked for number, gender, or case. Inalienable possession is indicated by pronominal prefixes distinguishing first, second, and inclusive persons: *mi-sí* 'my foot/feet', *ni-sí* 'your foot/feet', *sí* '(his, her, its, their) foot/feet', *ų-sí* 'our feet'. In first person, a distinction is made between body parts subject to control (*mi-*) and those not (*ma-*): *mi-napé* 'my hand', *mi-čʰǫ́te* 'my heart'; *ma-wé* 'my blood', *ma-tʰúčʰuhu* 'my ribs'. Alienable possession is expressed with the controlling prefixes plus *tʰa*: *mitʰá mila* 'my knife', *nitʰá mila* 'your knife', *tʰa mila* 'his/her knife', *ųkúʰa mila* 'our knife/knives'.

Verb stems may be reduplicated to indicate distribution, repetition, or intensity: *ƚáγa, ƚaxƚáγa* 'to be rough', *čeka, čekčeka* 'to stagger'. Interestingly, stress generally appears on the first syllable of reduplicated verbs denoting actions, but on the second syllable of those denoting states: *psípsiča* 'jump' but *puspúza* 'be dry'.

Several sets of prefixes appear with verbs. The best known are termed instrumental prefixes. These qualify the verb root, indicating a kind of action or force: *ka-hų́ta* 'to sweep away with sudden strokes', *yu-hų́ta* 'to rake (sweep off by pulling)', *pa-hų́ta* 'to sweep away as by pushing along a mop', *wo-hų́ta* 'to sweep away by blowing'. The most productive in Lakhota are *ka-* by striking, with sudden impact', *yu-* 'by pulling, *pa-* 'by pushing', *wo-* 'by blowing, from a distance, by piercing', *wa-* 'by sawing', *na-* 'by kicking' or 'by heat or inner force', and *pu-* 'by pressure', *ya-* 'with the mouth'. They are derivational, creating new lexical items sometimes with idiomatic meaning. They can add causative meaning to stative verbs: *stáka* 'to be listless', *ka-stáka* 'to throw out jellylike substances'.

There are three locative prefixes in Lakhota: *a-* 'on' or 'off', *o-* 'in', and *i-*, with meanings including 'against', 'by means of' or 'because of', and 'in relation to': *a-lí* 'to step on', *a-kážipa* 'to shave off'; *o-náp^ha* 'to flee into', *o-mná* 'it smells in a place'; *i-póyǫ* 'to blow against', *i-čʰǫ́ze* 'to be angry on account of'. The locatives can occur either before or after instrumentals, depending on their scope: *na-á-blaya* 'to smooth the top of a pile with the foot'; *a-ná-blaya* 'to smooth something with the foot over something else'. The prefix *o-* can serve as a locative nominalizer: *o-náp^he* 'hiding place'. The prefix *i-* can serve as an instrumental nominalizer: *i-íkpakʰįte* 'napkin' (*ikpákʰįta* 'to wipe one's own'). A prefix *wa-* appears pervasively as an indefinite object marker deriving intransitive verbs, and as a nominalizer of stative verbs: *wa-*

kʰúte 'to shoot things', *wa-tʰó* 'something blue/green'.

Of special interest in the Siouan languages is case marking. Grammatical relations are indicated primarily by pronominal prefixes on verbs. Like the possessive prefixes, they distinguish first, second, and inclusive persons. (Third persons are unmarked.) There are two sets of pronominal prefixes, one for semantic agents, the other for patients. Agent pronouns refer to those who perform, effect, and instigate actions: *wa-kʰíze* 'I'm fighting', *wa-ké* 'I dug', *a-wá-ʔu* 'I brought (him/her/it)'. Patient pronouns refer to those who do not: *ma-híxpaye* 'I fell', *ma-čʰúwita* 'I'm cold', *ma-lákʰota* 'I'm Sioux'; *a-má-ʔu* '(s/he) brought me', *ma-yá-ya-sigla* 'me-you-by.talking-hurt' = 'you hurt my feelings'. Either an agent or patient may appear alone with an intransitive verb. Transitive verbs may contain two patient prefixes: *í-ni-ma-škola* 'I (PATIENT) am as small as you (PATIENT)'. Case choice is lexicalized, learned with each verb, so the original semantic basis of the case choice can become obscure over time, as the literal meaning of an idiom fades or the meaning of a verb shifts. In general, however, the original semantic basis of case choice is clear (Mithun 1991a).

Reflexives are derived with the verbal prefix *iċ̣-*. These appear with patient pronouns: *čʰapá* 'stab', *čʰa-m-íċ̣-pʰa* 'stab-1PATIENT-REFLEXIVE-stab' = 'I stabbed myself'. Reciprocals are derived with the prefix *kičʰi-*: *čʰa-kíčʰi-pʰapʰa=pi* 'they stabbed each other'. Action toward one's own possession is indicated with the prefix *ki-*, which causes a following velar to palatalize: *ki-čʰúwa* 'pursue one's own'. A prefix of similar form but no palatalizing effect indicates action toward another's possession without permission: *ki-kʰúwa* 'pursue another's'. A combination serves as a benefactive: *kíči-čʰuwa* 'pursue for another'.

The enclitic *=pi* indicates plurality of all human subjects and/or first or second person objects: *ya-tʰí* 'you (SG) dwell', *ya-tʰí=pi* 'you all dwell', *tʰí* '(s/he) dwells', *tʰí=pi* 'they dwell'; with inclusive forms it yields inclusive plural or exclusive: *ų-tʰí* 'thou and I dwell', *ų-tʰí=pi* 'you all and I dwell', s/he or they and I dwell', *ų-yá-kte=pi* 'you killed us all'. The prefix *wičʰá-* (from a noun for 'person') marks plurality of third person human direct objects: *wičʰá-wa-kte* 'I killed them'.

Other enclitics add various aspectual and modal distinctions, as well as negation. Some show different forms associated with male and female speakers (section 5.2). Assertions are typically followed by *=yelo* in the speech of men, but simply by *=ye* in the speech of women. There are several imperative forms: *kašká=yó* 'tie it! (man ordering or permitting)', *kašká(=na)* 'tie it! (woman ordering)', *kašká=yé* 'tie it! (woman permitting)'. Polite requests are the same for both: *kaškí=yé* 'please tie it'. A dubitative enclitic *=so* is used by men, *=se* by women.

Basic word order is SOV. Constituents may appear to the left of the nuclear clause for special focus, or to the right for backgrounding. Relative clauses are formed by the addition of an article following the clause: *ognà šųk-mánitu wą watʰépkʰiye ċ̣ų*

hé tá xpáya. 'in.the.road wolf a (he).ate.up.his.things the-PAST that.one dead (he).lay' = 'He came upon the wolf who had taken all his cooking, lying directly in his path' (Deloria 1932: 23). Subordinate clauses precede main verbs: *hé mičʰų́kši yúzįkta čʰį́* 'that.one my.daughter (he).will.marry (he).wishes' = 'He wishes to marry my daughter' (Deloria 1932: 12).

Some of these structures can be seen in the passage below from Deloria 1932: 80-1. The free translation is hers. The basic SOV order can be seen in line b. The indefinite article *wą* appears in a, b, and f; the definite article *kį* in c, d, and g. In d, it forms an adverbial clause. Reduplication can be seen in lines a and c. A reflexive possessive prefix *ki-* is in line b: 'she set her own'.

a.	*Pʰeží-hąska-ska-ožù*		*wą*	*él*	
	grass-long-REDUPLICATION-growth		a	there	
	'Where the tall prairie grass grew thickly				
b.	*tʰasíyak-nųpa=la*	*wą*	*wa-hóxpi*	*ki-glé=la=škʰe?.*	
	intestine-two=DIM	a	NOMINALIZER-nest	own-put=DIM=HEARSAY	
	a little meadowlark had her nest.				
c.	*čʰį́čá*	*kį*	*waná*	*tʰąkį́kįyą=pi=la*	*ké́yaš*
	child	the	now	large.REDUPLICATION=PL=DIMINUTIVE	but
	Though they were now quite grown, her children				
d.	*naháxʔčį*	*kįyá=pi=la=šni*	*kį*	*walého̜l*	
	still	fly=PL=DIMINUTIVE=NEGATIVE	the	about then	
	had not yet had their flying tests when,				
e.	*ųgná*	*óp*	*yąká=he*	*xčeho̜l*	
	suddenly	with them	sit=CONTINUATIVE	just then	
	without warning,				
f.	*sį́té-xla*	*wą*	*ú*	*ną*	
	tail-rattle	a	come	and	
	a snake came in and				
g.	*wa-hóxpi=la*	*kį*	*okáwįx*	*kakšá*	*hiyúka=ke=?.*
	NM-nest=DIM	the	go.round	coil	arrive.and.stop=rather=DECL
	lay down, circling the nest.'				

Siuslaw*: *Siuslaw (proper), Lower Umpqua*

Siuslaw and Lower Umpqua are closely related dialects formerly spoken in southern Oregon along the lower Siuslaw and Umpqua Rivers and the adjacent coast. The name *Siuslaw* comes from the name of the speakers for themselves: *šá·yušła* (Frachtenberg 1911: 442). Vocabulary from both dialects was collected in 1884 by James Owen Dorsey, who determined that they constitute a single language. Dorsey grouped them with Alsea and Yaquina into a Yakonan stock, a grouping adopted in Powell 1891. Work by Frachtenberg in 1911 suggested that the larger grouping was untenable, and Powell revised his classification in 1915. In 1918 Frachtenberg proposed that Siuslaw, Yakonan, and Coosan shared a special relationship, and Sapir combined these into a Coast Oregon branch of his Penutian stock in his 1921 classification. The hypothesis of a Coast Oregon group remains promising (Golla & DeLancey 1997: 181, Grant 1997), though unfortunately the languages are no longer spoken.

The most extensive documentation of Siuslaw comes from Frachtenberg's field work during three months at the Siletz reservation in the spring of 1911. He worked primarily with Louisa Smith, an elderly Lower Umpqua woman in ill health who knew no English, and her husband William Smith, an Alsea man who knew Lower Umpqua as a second language. Nevertheless, he produced a set of texts with vocabulary list (1914) and a detailed grammatical sketch (1922b). Swadesh taped Lower Umpqua and Siuslaw vocabulary in 1953, and Hymes worked for a few hours with three Siuslaw speakers in 1954, but the language had disappeared by the 1970s.

An analysis of the phonology is in Hymes 1966. Frachtenberg had posited five series of stops: voiceless, voiced, aspirated, lenis glottalized, and fortis glottalized. Hymes shows that the voicing, recorded only sporadically, is not distinctive. What was recorded as aspiration is better analyzed as stop plus *h*. The difference between the two degrees of glottalization, transcribed as *C'* and *C!* respectively, is expressive and variable by individual speaker, rather than distinctive. Hymes concludes that the glottalized stops could be analyzed as either ejectives or clusters, but opts for clusters. Palatalized *l* has no distinctive status. Alternation between velars and uvulars is also conditioned by context, as is labialization of velars. A pitch accent marked by Frachtenberg is identified as an intonation contour. Mid vowels are expressive but not contrastive, as is the distinction between two central vowels. Hymes concludes that Siuslaw contained the following distinctive sounds: *p, t, c, č, ƛ, k, ʔ, s, š, ł, x, h, m, n, l; i, a, u, ə*. In material cited here, all drawn from Frachtenberg, modern Americanist symbols have been substituted for the original narrow transcription for readability.

Some stems in the language are basically nominal, referring to kinsmen, body parts, animals, or certain natural objects. Most stems, however, take on the identity of nouns or verbs only with the addition of suffixes: *cíƛ-ai*ʔ 'he shoots', *cíƛ-i* 'arrow'.

There are only two prefixes, both on nominals. The prefix *m-* occurs only on some terms of relationship: *m-îtà* 'father', *m-ā·t̓i* 'elder brother'. (All terms with this prefix also occur in Alsea, the language immediately to the north in which there was considerable bilingualism: Alsea *tāʔ* 'father', *hāʔt̓* 'elder brother'.) The second prefix, *qa-*, is an ergative case marker that appears with the same nouns and with first and second person free pronouns: *qa-mitáč wit̓čîstū·n* 'her father (ERGATIVE) sent her'. Ergative case on other nouns is indicated by complex ablaut: *hī·qʷ* 'wildcat', *hyacícun hyáqʷ* 'Wildcat (ERGATIVE) put it on.' Absolutive case is unmarked.

Other cases are marked with nominal suffixes or enclitics. A genitive suffix can identify possessors: *t̓it̓iai* 'salmon', *t̓it̓ay-émł txainʔ* 'salmon's tracks'. Possessors may also be identified by pronominal enclitics: *c̓îpʼmú·t* 'friend', *c̓îpʼmú·t=īn* 'my friend'. The enclitic may appear on the possessed noun itself, or on a preceding modifier or even linker: *sʔacíč* 'thus', *sʔacíč=īn hai* 'thus=my mind' = 'Thus I think'. The possessive enclitics consist of an increment *=ī* for first and second persons or an increment *=č* for third, followed by the subjective pronouns.

An oblique case suffix marks locatives (*ƛi·yáau* 'fire', *háiqmas ƛi·yáw-a* 'near the fire', and instruments (*čîmčámi* 'ax', *čimčámy-a-čxawáau* 'with an axe (he) killed will be'). The same oblique case also appears on indefinite patients in clauses translated with English transitives: *t̓it̓i·a* 'fish', *mí·kʷtu·xc t̓it̓i·ay-á* 'you two shall cut salmon (OBLIQUE)'. Additional suffixes further qualify the locative by indicating motion toward, from, over, along: *cí·w-a* 'in the water', *čí·w-a-č* 'into the water'.

Verbs consist of a root optionally followed by suffixes and/or enclitics. Subjects and objects of clauses are specified by morphologically bound pronouns. First, second, and third persons are distinguished, inclusive and exclusive first person, and singular, dual, and plural number. Third person subjects are unmarked. The exclusive forms are derived from a combination of third person dual or plural plus first person forms: *=auxûn* 1EXCL.DU < *=aux* 3DU + *=n* 1SG; *=nxan* 1EXCL.PL < *=nx* 3PL + *=n* 1SG. The second person singular has the same form as the third person plural: *=nx* 'you/they'.

Subjective pronouns are enclitics, attached to the first word of the clause. Their forms can be seen with the verb *xípʼxšî* 'work': *xípʼxši=n* 'I work', *xípʼxšy=ans* 'we two (INCLUSIVE) work', *xípʼxšy=anł* 'we all (INCLUSIVE) work', *xípʼxšy=auxûn* 'we two (EXCLUSIVE) work', *xípʼxxy=anxan* 'we all (EXCLUSIVE) work', *xípʼxšî* 'he works', *xípʼxšy=aux* 'they two work', *xípʼxšy=anx* 'they all work'. The first word of the clause, to which they are attached, may be a verb as above, an independent pronoun, a modifier, or a linker: *háina=nł hu·čtu·x wáht·x* differently=we play.will again = 'Now we shall play differently.'

Object pronouns are verbal suffixes. First or second person objects are marked by a suffix *-c*: *ƛəłú·y-u··-c=ac* hit-INDICATIVE-1/2OBJECT=2DU.SUBJECT = 'you two are hitting me'. Third person objects are marked by *-n*: *ƛəłú·y-u··-n=ac* hit-INDICATIVE-

3OBJECT=2DU.SUBJECT = 'you two are hitting him'. Separate words may further identify the object: *sʔàs háimu·t ƛəɬú·y-u·-n* he.ERGATIVE all hit-INDICATIVE-3OBJ = 'he hits all'. If the verb is clause-initial, the subject enclitic follows the object suffix: *ƛəɬú·y-u·-c=aʷxûn* hit-INDICATIVE-2OBJECT=1+3DU.SUBJECT = 'we two are hitting thee'.

If a verb involves an animate beneficiary ('for someone'), source ('to, onto someone'), or goal ('from someone'), an applicative suffix may be added to the verb to allow it to be expressed as a grammatical object. The first or second person applicative is *-əm-*: *hi·cáy-əm-c=anx qni·xc* put-APPLICATIVE-1/2.OBJECT=2SG.SUBJECT you.ERG = 'you put it on me'. The third person applicative is *-x*: *hamxíx-u·-x* tie-INDICATIVE-APPLICATIVE '(he) tied it on (him)', *łakwák-u·-x=an* take-INDICATIVE-APPLICATIVE=1SG.SUBJECT 'I took it away from him'.

The Siuslaw verb suffix complex can include markers that imply the involvement of an individual through his or her possession. Agents may affect themselves through action on an inalienable possession, shown by the suffix *-aitx*: *kuc-áitx=an qánni* paint-INALIENABLE.INVOLVEMENT=1SG.SUBJECTface = 'I paint my face'. This suffix often appears in idioms: *pɬn-aitx hai* = sick-INALIENABLE.INVOLVEMENT mind = 'they were sorry'. Another suffix marks involvement of a first or second person through an alienable possession: *qnú·h-u·-c-m=în qaʔč* find-INDICATIVE-1/2-ALIENABLE.INVOLVEMENT=1SG.SUBJECT knife = 'I found my knife'. The effect of an event on a person distinct from the subject through a possession can be marked by a suffix *-ɬ*: *sʔàs ƛú·xy-u·-ɬ-c=anx mità* he.ERG know-INDICATIVE-ALIENABLE.INVOLVEMENT-1/2.OBJECT=2SG.SUBJECTfather = 'he knows thy father', *sínxy-u·-ɬ=n hi·cí·* like-INDICATIVE-ALIENABLE.INVOLVEMENT=1SG.SUBJECT house = 'I like his house'. Imperatives are constructed with the suffix *-i·* in place of the indicative *-u·*: *cxánw-i·-ɬ híqu·i* comb-IRREALIS-INALIENABLE.INVOLVEMENThair = 'Comb his hair!'

Other verbal suffixes indicate reciprocality, distribution, attempt, and negation. A reciprocal is *-naw*: *ƛo·ɬ-* 'to hit', *ƛōɬ-náw=ans* hit-RECIPROCAL=INCL.DU.SUBJECT'we two hit each other'. Distribution of intransitive actions or states is indicated by *-i·ɬax*. The suffix appears with verbs or kinship terms used as predicates: *máščˇ-i·ɬax=anxan* sister-DISTRIBUTIVE=EXCL.PL.SUBJECT'we are sisters'. A conative *-čˇ* is translated 'to try', 'to do something slowly', 'to kind of': *yá·xa-čˇ-i-st=nx tīɬayá* = see-CONATIVE-IRREALIS-INCHOATIVE=2.SUBJECTfood = 'you (will) try to begin to look for food'. The negative suffix *-i·ɬ* occurs only with intransitives. Verbs containing it are preceded by a negative particle: *čiɬʔx-* 'move', *ku·i čiɬʔx-i·ɬ* = not move-NEGATIVE = 'not he moved'.

Several verbal suffixes indicate passive voice. Some mark passivization alone, others distinguish tense or aspect as well: present, future, past, and durative. They may be combined with suffixes indicating involvement of an individual through action on a possession. The indirectly affected possessor, who would be expressed as the object of an active verb, is the grammatical subject of the passive counterpart.

kumínč=nx	*txu· ɬu·há-u·-ɬ-tx-anx*			*ɬa·mš*
not=2SG.SUBJECT	just buy-INDIC-POSSESSIVE.INVOLVEMENT-PASSIVE=2SG.SUBJECT			child
'Not for nothing will they buy your child.'				('are you child bought')

Several suffixes mark commands. The suffix *-əm* marks intransitive imperatives, *-īs* transitive imperatives, and *-ī* those involving the possession of the addressee. No second person pronoun appears. Exhortatives convey a wish: 'let me . . .', permit me to . . .', 'let him . . .' Inclusive exhortatives ('let's') are formed from commands with inclusive subject suffixes: *ƛ̓ūī-əm=anɬ* = eat-IMPERATIVE=INCL.PL.SUBJ = 'Let's eat.' Prohibitives consist of a durative verb preceded by a negative particle with subject enclitic: *kwí·=nx xíntm-īs* = not=2SG.SUBJECT travel-DURATIVE = 'Don't travel!'

Aspectual suffixes include an inchoative *-st* ('begin to'), terminative *-i·xa* ('finish'), frequentatives *-aɬ̓i·*, *-i·tx* ('constantly'), duratives *-i·s*, *-u·s* ('keep on', 'continually'), and intentionals *-awax*, *-awu·n* ('be about to, be going to, 'want to'). Tense suffixes distinguish present or recent past *-ɬ*, remote past *-yax*, and future *-tu·x*. A past durative action is indicated by reduplication of the verb stem plus remote past suffix: *tu·č* 'spear', *twáčičyaxaun* 'I have been spearing it.'

Two verbal suffixes may indicate collective intransitive action, one general, one for humans only: *qačn-* 'to go', *qačn-at-ú·* 'they walk about together'; *hałˑ* 'shout', *hałˑ-itx hičú* shout-COLLECTIVE person = 'people shout'.

The lines below are from a tale dictated in Lower Umpqua by William Smith to Frachtenberg (1911: 28). Grizzly Bear had been devouring people, so they plotted to kill him. In the first line, future tense, instrumental case, and passive future passive suffixes can be seen. The next two lines show the interplay among pronominal forms.

Kást-tūx,	*iɬ*	*txu·*	*čimčámy-a-č*	*xaw-áau.*	. . .
get.up-FUTURE	then	just	axe-LOC-INSTRUMENTAL	die-FUTURE.PASSIVE	
he get up will	then	just	axe with	he killed will be.	

'[As soon as] he should wake up, they would kill him with an axe. . .

"*ƛ̓xmi·-yáy-u·-n=anɬ.*
kill-FUTURE-INDICATIVE-3OBJECT=1INCLUSIVE.PL.SUBJECT
Kill him will we.
"We will kill him,

ƛəás=ənɬ	*kˇxáy-u·-c,*	*ɬ*	*sʔáca=nɬ*	*ƛ̓xmīy-áy-u·-n."*
he.ERG=INCL.PL.SUBJ	disappear-INDIC-1/2OBJ	so	thus=INCL.PL.SUBJ	kill-FUT-INDIC-3OBJ
he us	kill he-us	so	thus we	kill him will

because he has killed (many of) us."'

Takelma = Takilma*: *Lower Takelma = Takelma proper, Latkawa = Upper Takelma = Table Rock, Hanesak*

Takelma was spoken along the Rogue River in western Oregon. The name comes from the people's name for themselves: *ta·kelmà?n*, i.e. *ta·-kelám-a?n* 'along-river-person' (Sapir 1912: 223). The Takelma suffered badly at the hands of Whites during the Gold Rush; most survivors were taken to the Table Rock reservation in 1853, then moved to the Grand Ronde reservation in 1856. Some later went to the Siletz reservation. In each community they were mixed with speakers of other languages.

Early Takelma material was collected in 1857 by Hazen, in 1859 by Barnhardt, in 1884 by Dorsey, and in 1903-4 by St. Clair, all now in the NAA. The most important work was done by Sapir, who spent just one and a half months during the summer of 1906 at the Siletz reservation working with a single speaker, Mrs. Frances Johnson (1845-1934), born in a village on Jump-off-Joe Creek. On the basis of this work, he produced a collection of texts (1909b) and an impressive grammatical sketch (1912), in addition to a discussion of religious practices that includes 11 short medicine formulas with interlinear and free translations (1907a). In 1933 Harrington collected general vocabulary and placenames from Mrs. Johnson and from two other women, Molly Orton (or Orcutt), whose first language was Galice, and Aneti Scott, who spoke the Table Rock dialect. He made aluminum disk recordings of Mrs. Johnson reciting texts she had dictated to Sapir. At that time he heard of still another woman named Mary Eagen (or Aiken), who spoke a dialect called Hanesak, but he did not work with her. There may have been additional dialects (Kendall 1981). In 1934 anthropologist Philip Drucker worked with Willie Simmons, another Upper Takelma speaker, and perhaps Mrs. Orton. His notes are in the Bancroft Library. More recent analyses of Takelma material include Kendall 1977, 1997, Rude 1986a, and Lee 1991.

Around 1914 Sapir suggested a possible Penutian affiliation for the language (Sapir & Swadesh 1953). In 1918 Frachtenberg, who had been working with the Kalapuyan languages, proposed a special Takelma-Kalapuyan relationship, and a deeper relationship to the Chinookan languages. Sapir kept the languages distinct in his 1921 classification, but included all of them under his proposed Penutian stock. The possibility of a common Takelma-Kalapuyan ancestor, named Proto-Takelman, was further explored by Swadesh (1953), Shipley (1969), Berman (1988, 1990b), and Kendall (1981, 1997). Although some lexical resemblances were found, the languages are phonologically and grammatically strikingly different. In 1998 Kendall & Tarpent examined the evidence more closely and concluded that Takelma and Kalapuyan do not share a special relationship after all. Some earlier perceived similarities were simply erroneous. Others are due to content and perhaps a deeper common Penutian affiliation. More detailed discussion of this history is in the Kalapuyan sketch.

The Takelma consonant inventory contains plain, aspirated, and ejective stops *p, t, k, k^w; p^h, t^h, k^h, k^{hw}; p̓, t̓, c̓, k̓, k̓^{w}*, as well as *?*. Fricatives are *w, s, y, x,* and *h*, and nasals *m, n*. The *s* varies between alveolar and postalveolar. There is a voiced lateral *l* and a marginal voiceless lateral *ɬ*, which appears only in exclamations and the speech of certain characters (Grizzly Bear) under certain circumstances (Hymes 1979). (All Takelma material cited here is drawn from Sapir. Sapir represents the stops as *b, d, g, gw; p', t', k', k'w; p!, t!, ts!, k!, k!w*, describing them as voiceless lax, voiceless aspirated tense, and fortis (voiceless stop followed by explosion and momentary hiatus) respectively. The glottal stop he represented as superscript epsilon $^{\varepsilon}$, according to practice at the time. These symbols have been adjusted to correspond to modern usage as in Shipley 1969, but Sapir's analysis is preserved.)

There are six vowels: *a, e, i, o, u,* and *ü*. Syllabic nuclei consist of short vowels, long vowels, short diphthongs, or long diphthongs. High vowels alternate with glides: *piliut^{h}e?* 'I jump', *piliwát^h* 'you jump'. There is a pitch accent system whereby the stressed syllable of a word bears distinctive high/rising or low tone: *wayá* 'knife', *wayà·* 'his knife'. The high pitch occurs only on short vowels, the rising pitch only on long vowels or diphthongs. (Sapir indicates length with a raised vowel (*e^e* for *e·*) and/or a macron (*ā^a* for *a·*), high tone by `, rising tone by ~, and falling tone by ´. These symbols are replaced here by · for length, ´ for high/rising and ` for falling tone, as in Shipley 1969, to avoid confusion.) As in some other unrelated North American languages, stressed syllables closed by glottal stop show falling tone. Sapir notes that the falling pitch 'comes out most clearly in forms where the catch has been secondarily removed' (1922: 20): *i̓omamà?n* 'I kill him', *i̓omomànta?* 'as I killed him'.

Takelma morphological structure is polysynthetic and fusional. Verbs, which may stand alone as clauses, may contain various preverbs, a verb stem, various derivational suffixes, tense/mode/pronominal suffixes, and subordinators. At least some of the preverbs are actually incorporated nouns, bound very loosely to the stem. Some indicate the kind of patient involved in the action: *pe·m-wa-?i·-i̓oxòxi?n* = 'stick-together-hand-I.gather.(them)' = 'I gather sticks together'. Some indicate adverbial notions, particularly location or direction: *xa-i·-mì·i?wa-skì·pi?n* = 'in.two-hand-probably-I.cut.him' = 'I'll probably cut him through'. Some indicate the kind of instrument involved: *han-waya-swilswàlkhi* = 'across-knife-he.tore.him' = 'he tore him open with a knife'. Some serve various modal and connective functions: *k^{w}á·n-ha-yaxa-i̓ululkà?n* = 'road-in-continuously-I.follow.(it)' = 'I keep following the trail'. The same morpheme may function to indicate a kind of patient, location, or instrument, depending upon its position in the word. The morpheme *i·-*, for example, appears in *i·-p̓i·-no·k^{hw}a?n* 'I warm my hands' (patient), *p^{h}im-i·-ho·k^{w}ak^{w}à?n* 'I run with salmon in my hand' (location), and *i·-?o·tinì?n* 'I hunt for it with my hand (I am feeling around for it)' (instrument). Many morphemes that indicate the involvement

of body parts as patients or instruments have related locative meanings: 'head'/'over, above'; 'mouth, lips'/'in front'; 'ear'/'alongside'; 'neck, nape'/'in back, behind'; 'waist'/'between, in two'; 'back'/'on top of'; 'breast'/ 'facing'; 'woman's private parts'/'in'; 'leg'/'under'; 'foot'/'down, below'; 'eye, face'/'to, at'.

Many preverbs also appear as free nouns, such as *bé·m* 'stick', but others do not: *i·-* 'hand' requires a possessor. The preverbs differ syntactically from independent nouns. If, for example, the morpheme *waya* 'knife' of 'I'll probably cut him' above were free, it would appear with a postposition *wa* 'with' indicating its instrumental role: *wàya wá han-swilswàlhi*. Many of the locative preverbs also appear as locatives with nouns: *han-yatát^{h}e?* 'I swim across', *han-xawkán* 'across the creek'. Many of the modal and connective preverbs also appear as clausal clitics.

Most verb stems are monosyllabic. The basic stem serves as an imperative: *tó·m* 'kill him!'. It is also the basis of future, inferential, and potential verbs, that is, irrealis forms. A derived aorist stem is the basis of verbs used for past, present, and immediate future, that is, realis forms: *ɬomóm* 'he killed him'. Relations between the forms of irrealis and realis stems are complex, often involving alternations in vowel quantity and in stop series: *op-/o·p-* 'dig up'; *ta·k-/ɬayak-* 'find'.

Sapir isolated around 30 derivational suffixes with varying degrees of semantic transparency and productivity. Frequentatives, continuatives, and usitatives are formed with reduplicative suffixes: *lepe-* 'pick up and eat (seeds)', *lè·p^{h}lap^{h}* 'pick and eat many (seeds)!'; *wok-* 'arrive', *wokowà?k^{h}* 'many arrived'; *hul-p-* 'skin, peel off bark', *he··i··húluhal* 'he kept peeling off bark'; *he·l-* 'sing', *helèhal?* 'he used to sing'.

Another set of suffixes affect the valency of transitive verbs. There is a causative *-n*: *yelnatà?* 'you will be lost', *yaln-an-atà?* 'you will lose it'. Various applicatives give direct object status to participants that would otherwise be oblique. A comitative *-(a)k^{w}-* adds the meaning 'with': *ya·n-* 'go', *yá·nk^{hw}* 'he takes it along (he goes with it)'. Another applicative ('indirective') *-s-* makes a semantic goal or source the direct object: *al-ta-p^{h}-up^{h}au-s-pi?n* 'I blew at you', *he··i·u··s-pi?n* 'I went away from you'. Another, *-(à)lt-*, adds a meaning 'moving at or toward, in order to reach, going to get': *hiliut^{h}e?* 'I climb', *hiliw-àlt-a?n* 'I climb for it'. A benefactive *-(a)n-* adds the meaning 'on behalf of': *wa?-i··ɬoxó·xi?n* 'I gather them', *wa?-i··ɬoxó·x-in-i?n* 'I gather them for him'. (The *-i-* of the suffix results from an umlauting effect of the *-i-* of the following pronoun.) An indirect reflexive *-k^{w}a-* marks an action done to one's own possession: *sin-?i··ɬkilî?s-k^{w}a* 'he scratched his own nose'.

A third set of suffixes detransitivize verbs. One, *-xa-*, creates intransitives with implied indefinite objects: *ɬi·làmta?n* 'I fished for them', *ɬi·làm-xa-te?* 'I went fishing'. A reflexive *-k^{w}i-* derives grammatical intransitives with only a subject pronoun: *al-xà··k^{hw}i-t^{h}* 'he looked at himself'. The reciprocal *-an-* has a similar effect: *ɬoyó·x-in-ik^{h}* 'we go together, accompany one another' (with applicative *-x-* and umlaut). There is

a middle *-x*: *i··t^{h}ke·yilî?n* 'I roll it', *t^{h}ke·yál-x* 'it rolls'. A 'positional' *-í·* indicates resultant states: *ɬa-i-ha-i-t^{h}kù·pa?n* 'I upset it (box-like object)', *ɬa-i-ha-u-t^{h}kuɬit-í·* 'it lies upside down'. An impersonal *-iau-* gives 'an indefinite, generalized, collective, or impersonal signification' to the always third person subject: *ya·n-iá^{u}?* 'people go', *sa·nsànsin-ia^{u}?* 'fighting is going on'.

The inflectional suffixes are fused forms simultaneously indicating person and number of the core arguments and tense/mode (aorist, future, potential, inferential, present imperative, and future imperative). As Sapir notes, tense itself is not highly differentiated, since the aorist is used for past, present, and immediate future, and the future for more remote future. Second person subjects of imperatives, some third person subjects, and all third person objects are not overtly marked by suffixes. Two kinds of intransitives are distinguished by pronominal paradigms: (I) those referring to actions, such as 'come', 'go', 'run', 'dance', 'die', 'shout', and even 'be' and 'sleep' and (II) those referring to conditions, such as 'be tired', 'stand'. Many class II verbs are derived from transitives. Some verbs pattern with class I in some tense/modes, and class II with others. Class II 'drip' and 'break', for example, appear with class I endings in the frequentative: 'keep dripping', 'break to pieces'. In transitive pronouns, agent and patient forms are tightly fused, but where an order can be discerned, patient markers precede agent markers. Passives, which occur frequently in connected speech, are formed with a suffix *-(a)n* (aorist), *-(a)na?* (future), or *-am* (inferential) in place of an agent pronoun: *i··ɬàuɬiwi-?n* 'I caught him', *i··ɬàuɬiwi-n* 'he was caught'. Agents of passives are never specified by nominals within the clause.

Finally, subordinating suffixes indicate a temporal, causal, conditional, or relative relationship of one clause to another: *hò·k^{h}te?* 'I run', *hò·k^{h}te·ta?* 'when I ran, I running'. A subordinate clause may be introduced with a particle and may precede or follow the main predicate: *ɬolx ùsi ɬumú·xta?* = 'dentalia give.me for.you.have. struck.me'. Quotations are cited directly, but complements of verbs like 'know', 'see', and 'discover' are subordinated: *yoɬoyà?n ɬim kai·k^{h}na?* = 'I.know.him salmon he. having eaten'. A description of Takelma syntax based on the texts is in Kendall 1977.

Noun stems may be simple roots (*tà·n* 'rock') or derived (*hoit-à?s* 'dance-er'). A few roots serve as both noun and verb stems: *sè·l* 'black paint, writing', *se·l-à-mt-a?n* 'I paint it'. Participles may also function as nominals: *túh-ak^{hw}* 'killed person'. Nouns may be accompanied by locative and/or posssessive markers (in which case an increment appears after the root): *k^{w}á·n* 'road', *ta·=k^{w}a·l-ám* 'along the road', *k^{w}a·l=ám-t^{h}k^{h}*, 'my road', *tak^{h}=k^{w}a·l-am-té·* 'over my road'. Possessive suffixes distinguish first, second, third, and third person reflexive (possessor is subject of the sentence), and singular and plural number in all but simple third person. The difference between simple and reflexive third person possessors can be seen by comparing: *mà-xa wa··himú^{h}* = 'father-3 to-spoke' = 'he spoke to his (someone

else's) father' and *mà-xak^{w}a wa·-himí^{h}* = 'father-3.RFL to-spoke' = 'he spoke to his (own) father'. A special set of possessive affixes appears with kin terms, with a prefix for first person and suffixes for others: *wi-hám* 'my-father' *ham-i?i^{h}* 'your father'. Vocatives are formed with a suffix: *ham-í-* 'O father!' Nouns bear no case marking.

There are four sets of demonstratives: indefinite 'that', near speaker 'this', near hearer 'that', and near a third person 'that yonder'. There is a distinct class of adjectives, which follow the noun they modify: *wa-iwì· tu·* = 'girl pretty' = 'pretty girl'. Adjectives may be simple roots or derived from nouns or locatives: *sin=hòk^{hw}-al* = 'nose=hole-ADJ' = 'with holes in nose'; *t^{h}k^{w}anàt^{h}-kwat^{h}* 'slave-having'; hapamìs-iki? 'dwelling in air'. Many of the same locative proclitics that appear with verbs and nouns also appear with adjectives: *tak^{h}-maháì* 'big on top'. Several enclitics follow nouns, free pronouns, or adjectives: an exclusive *=ta* 'only', plural *=tan/=han= kan*, dual *=ti·l*, *=wi?* 'every', and deictic *=?á* 'that one'.

Some of these features can be seen in the passage below from a text in Sapir 1909b: 26. Locative proclitics include *pa·=* 'up' in 'they arose and went again' and 'they (up and) continued traveling', and *xa=* 'between' in 'they always just cut them in two'. The instrumental *i·=* 'by hand' appears in 'they wrestled with them' and 'they cut them in two (by hand)'. Subordinating suffixes include participial *-ak^{hw}* in 'they continued traveling' and *-nà?* in 'they having found it'.

Mi· *pa·yewè·?.*
now they arose and went again
'Now they arose and went on again.

Kane· *yà?* *pa·te?yeweyák^{hw}.*
then they went they continued traveling
Then on they went, continued on their way.

Kane· *àni·?* *wili* *ta yakanà?*
then not house they having found it
Then, not finding a house,

k^{h}ai *k^{w}ala* *i·hemém*
things many they wrestled with them
they wrestled with all sorts of things,

xa-iyà·skipí·lhi.
they always just cut them in two
always just cut them in two.'

Timucua*: *Timucua = Utina, Potano, Itafi, Yufera, Mocama, Tucururu, Agua Fresca = Agua Dulce, Agua Salada, Acuera, Oconi, Tawasa = Toasi = Tuasi*

The Timucua were first encountered by Ponce de León in 1513 near present St. Augustine, Florida. At that time they inhabited southeastern Georgia and northern Florida, from the Okefenokee Swamp to the Atlantic, south to Daytona, and east nearly to the Gulf. In 1562 French Huguenots settled in the area, but they were driven out in 1565 by the Spanish, who established colonies and missions. Around 1703 the English, with Creek, Catawba, and Yuchi allies, began to invade, killing hundreds of Timucua and enslaving thousands (Crawford 1975 citing Mooney 1910). When the United States took possession of the Florida territory in 1821, only a handful of Timucua remained, living among other groups. All dialects listed above except Tawasa were mentioned by Pareja, the first grammarian of the language, but not all are attested. Tawasa was identified as a Timucua dialect by Swanton in 1929b.

Timucua was one of the first languages of North America to be documented. Descriptions of sources are in Granberry 1956, 1987, 1993, Milanich and Sturtevant 1972, Haas 1973a, and Crawford 1975, 1979. In the 16th century Huguenots Ribault and Laudonnière collected much vocabulary (Laudonnière 1975). The most important documentation was left by Francisco Pareja, a Franciscan missionary at St. Augustine. He arrived in Florida in the mid 1590s and remained with the Timucua until his retirement to Mexico City, where he died in 1628. Five of his works survive, a *Cathecismo en Lengua Castellana y Timuquana* from 1612, a *Catechismo y Breve Exposicion de la Doctrina Christiana* from 1612, and a *Confessionario en Lengua Castellana y Timuquana con algunos consejos para animar al penitente* from 1613 (Milanich and Sturtevant 1972: 78-113), all three now in the New York Historical Society (Smith 1858, 1860a), his *Arte y pronunciacion en Lengva Timvqvana y Castellana* from 1614 published in Adam and Vinson 1886, and a *Cathecismo y Examen Para Los Que Comvlgan En lengua Castellana y Timuquana* from 1627, now in the British Museum. Pareja mentions a dictionary as well, but it has not been found. Two documents with Timucua translations come from another missionary, Gregorio de Movilla: *Forma Breve de administrar los Sacramentos a los Indios y Españoles que viuen entre ellos* and *Explicacion de la Doctrina qve compvso el cardenal Belarmino, por mandado del Señor Papa Clemente 8*, both from 1635 and now in the New York Historical Society. There are two Spanish letters with Potano translations. The first, written to the governor of Florida in 1636 by a Timucua chief, is in the Archivo General de Indias, Seville. The other, written in 1688 to the king of Spain, was reprinted in Smith 1858, 1860a, Gatschet 1880a, and Vinson 1883. Copies of most of these manuscripts are in the National Anthropological Archive of the Smithsonian. Sixty Tawasa words recorded in 1708 were reprinted in Swanton 1929.

All subsequent work is based on these documents. Gatschet 1877a,b, 1878a, 1880 and 1881 contain descriptions of the language and culture. Grasserie 1888a provide a grammatical sketch, 1888b texts from Gatschet with interlinear translation and voca bulary, and 1889 a revised vocabulary. Gatschet & Grasserie 1889 contains furthe material with translation. Granberry describes phonology (1956) and provides a gram mar and lexicon (1987, revised 1989, 1993). Examples here are from Granberry 1993

Timucua is not closely related to any other language. Resemblances to neighborin Muskogean languages are generally attributed to borrowing (Brinton 1859: 137, Gatschet 1888, Crawford 1987). Some resemblances to various languages of Centra and South America were noted by Brinton, Gatschet, Crawford, Swadesh (1964: 548), Noble (1965), and Granberry (1987), but the evidence is inconclusive.

According to Granberry 1993, Tumucua contains consonants *p, t, k, k*^{w}*, č, f, s, h, m, n, l, r, w,* and *y*, with *b, d,* and *g* in Spanish loans. Vowels are *i, e, a, o,* and *u*. Stress is initial, with alternating secondary stress on words of more than three syllables.

Most roots are free and may be inflected as either nouns or verbs: *heba* 'say, speak, tell, utter, sing, language, word, speech, saying, utterance, song'. Stems may be simple (*huba* 'love'), compound (*biroistico* = *wiro-istiko* 'evil-man'), or derived (*hebaterasiba* = *hewa-tera-siwa* 'speak-good-FREQUENTATIVE' = 'one who habitually says kind things'). Reduplication signals intensity: *noronoromota* = *noro-noro-mo-ta* 'devotion-do-HABITUAL' = 'do with great devotion'.

Nouns consist of a root followed by an optional first or second person possessive suffix, pluralizer, and/or definite marker: *pahanicama* = *paha-ni-ka-ma* 'house-1-PL-the' = 'our house'. Postpositions meaning 'for', 'in', etc. may follow.

Verbs contain pronominal prefixes for subject and if transitive, object. There are forms for first and second persons but not third: *hochihubasotala* = *ho-či-huwa-so-ta-la* '1-2-love-TRANSITIVE-DURATIVE-IMMEDIATE' = 'I love you', *nihubasotele* = *ni-huwa-so-te-le* '1-love-TRANSITIVE-DURATIVE-IMMEDIATE' = '(he) loves me'.

Following the root may be suffixes for transitivity (*-so-* above), reflexiveness or reciprocity (*nihubasosibotela* = *ni-huwa-so-si-wo-te-la* '1-love-TR-RECIPROCAL-PL-DURATIVE-IMMEDIATE' = 'we love each other'), plurality of subject (*-wo-* above), and various aspects and modes. These include durative, completive, and conditional/potential (*-ta-* above, *hubasoco* = *huwa-so-ko* 'love-TR-CONDITIONAL' = '(he) may, might love (someone)'), habitual or iterative (*hubasonano* = *huwa-so-na-no* 'love-TR-HABITUAL-IMMEDIATE' = '(he) always loves (someone)'), intensity (*chihubasoteo* = *či-huwa-so-te-o* '2-love-TR-DURATIVE-INTENSIVE' = 'you love someone'), and immediate versus remote time (*-le* and *-no* above, *nihubasotaqwa* = *ni-huwa-so-ta-k*^{w}*a* '1-love-TR-DURATIVE-REMOTE' = 'I loved him (in the far past)'). These are followed by indicative, optative, subjunctive, or imperative modes: *nihubasobobilecu* = *ni-huwa-so-wo-wi-le-ku* '1-love-TR-PL-PERFECTIVE-IMMEDIATE-SUBJUNCTIVE' = 'if we had loved (him)'. Finally,

a set of pronouns similar in shape to the possessives may appear in questions.

Granberry reports that basic constituent order is SOV, or Subject-Complement-Predicate. Modifiers generally precede their heads. He provides the sentences below (1993: 107-10). The analysis and terminology are his.

a. *ano* *hebanano*
ano *hewa-na-no*
man speak-DURATIVE-IMMEDIATE
'The man is speaking.'

b. *oqe* *hubasotele*
oke *huwa-so-te-le*
that love-TRANSITIVE-DURATIVE-IMMEDIATE
'He loves someone.'

c. *iniqe* *nirabonoleqe*
inike *ni-orawo-no=leke*
happen 1SG-be.happy-IMMEDIATE=and
being I may be happy
'Being thus may make me happy.'

d. *nirabonoleqe* *uquata*
ni-orawo-no=leke *ukwa-ta*
1SG-be.happy-IMMEDIATE=and undertake-DURATIVE
I may be happy taken
'Having done this, I may be happy.'

e. *oqe,* *iniqe* *uquata,* *isinoleqe.*
oke *inike* *ukwa-ta* *isi-no=leke*
that happen undertake-DURATIVE speak-IMMEDIATE=and
he it having been taken may speak
'He may take the opportunity to say something.'

f. *Minolahana* *heqe* *Pedro* *ninatila*
mi-no-la-hana *heke* *Pedro* *ni-ena-ti-la*
arrive-IMMEDIATE-FUTURE.HABITUAL when Pedro 1SG-see-NEG-IMMEDIATE
he arrives it will be when Pedro I do not see
'I won't see Pedro when he arrives.'

Tonkawa*

The Tonkawa were encountered in the 18th and 19th centuries in central Texas. Groups living nearby, including the Yojuane, Mayeye, Ervipiane, and Sana, may have spoken related languages, but since they are essentially unattested their status cannot be determined (Hoijer 1931: ix). Powell's 1891 classification listed Tonkawa as an isolate, and that view prevails today. Possibilities have been investigated of links to Coahuiltecan (Swanton 1915, Troike 1967), Hokan (Sapir 1920, 1925), and Algonquian (Haas 1959, 1967a) but sufficient evidence has never been found to establish an affiliation (Goddard 1979d). When Hoijer published his grammar in 1931, only six elderly Tonkawa speakers remained, living near Tonkawa, Oklahoma.

Early work on the language includes unpublished vocabulary recorded by Chowell and Berlandier in 1828 and 1829, and 300 words collected by two Bavarian travelers, Oscar Lowe and Baron Friedrich von Rupprecht (Gatschet 1876a,b, 1877c). Gatschet recorded around 1000 words and 50 pages of texts in 1884 which remain unpublished. Lesser collected kinship terminology in 1929 (Hoijer 1933). Goddard notes that striking changes in vocabulary over the 19th century suggest a practice whereby words resembling the names of deceased persons were systematically replaced (1979: 359-63). Such taboo replacement of course renders genetic relationships more difficult to discern. The major documentation of the language was done by Hoijer working with John Rush Buffalo between 1928 and 1931. His material served as the basis of a grammar in 1931 (reviewed in Haas 1939b), a grammatical sketch in 1946a, a dictionary in 1949a (reviewed in Voegelin & Voegelin 1951), further description of syntactic suffixes and anaphoric particles in 1949b, and a text collection in 1972. A Tonkawa paradigm from Hoijer is reanalyzed in Hymes 1967, and patterns of clause-combining showing switch-reference are discussed in Jacobsen 1967. The rhetorical structure of a text from Mr. Buffalo is analyzed in Hymes 1987a. A treatment of syllable structure in Noske 1993 makes use of Hoijer's Tonkawa material.

Between 1933 and 1946 Hoijer revised his phonological analysis to yield the following inventory of consonants: plain stops *p, t, k, k*^{w}, *ʔ*, affricate *c* (dental to postalveolar), fricatives *s, x, x*^{w}, *h*, nasals *m, n*, and frictionless continuants *w, l, y*. (The stops were written earlier as *b, d, g, g*^{w}. All consonants but *h* and *ʔ* were first seen as having glottalized counterparts. These were reanalyzed as clusters.) There are short and long vowels: *i, e, a, o, u; i·, e·, a·, o·, u·*. (Some long vowels result from contraction.) The vowels may be followed by glides within a syllable. Of special interest in Tonkawa is a process whereby even-numbered stem syllables are reduced: long vowels are shortened, and short vowels disappear. (Stops before deleted vowels are geminated; sonorants become syllabic.) Such a process can be seen in words built on the stem *yamax-* 'paint face'. In *yam·x(a)-oʔc* 'I paint his face', the syllable *ma* is reduced to *m·* because it is the second syllable of the word. In *ke-imax-oʔ* 'he paints my face' the addition of the prefix *ke-* 'me' moves the syllable *ya* to second position within the word, where it is reduced to *i*; *ma*, now the third syllable, appears in its full form. The reduction of long vowels can be seen by comparing verbs built on the stem *xʔe·p* 'pull out': *xʔe·p-oʔc* 'I pull it out', *ke-xʔep-oʔ* 'he pulls me out'.

Verb stems are often compound: *yakau-natska-* 'kick-kill' = 'to kick to death'. Reduplication shows repeated action: *topo-* 'to cut', *totopo-* 'to cut repeatedly'.

There is a small set of verbal prefixes. First are first-person pronominal patients: *ke-ikapoʔ* 'he hits me', *ka-ʔacoʔ* 'I am sick', *keu-ʔacoʔ* 'we are sick'; *k-e·cinoʔ* 'I fall down' (cf. *hecnoʔ-c* 'I lie down'); *ke·-wawoʔ* 'I die'; *ke-ncolo?* 'I have sores, blisters'; *ka·-mamoʔ* 'I am burning'. Next is a patient plural: *ke-u-yakpoʔ* 'he hits us', *we-ikpa·weʔ* 'I hit ye' (*yakpa·weʔc* 'I hit you'), *we-ikapoʔc* 'I hit them' (*yakpoʔčʼ* 'I hit [him])'. (Third person singulars are unmarked.) Following the patient prefixes is the causative *nec-*: *ke-nec-ʔacoʔ* 'he causes me to become sick'. A benefactive *ta·-* adds the meaning 'to' or 'with': *he·malewoʔc* 'I dance', *ta·-he·malewoʔc* 'I dance with him'. An older causative *ya-* is closer to the root: *caxwoʔc* 'I am frightened', *ke-ya-cxawoʔ* 'he frightens me, causes me to fear'. Closest to the root is the adverbial *x(a)-* for motion to a distance or with force: *ka·noʔc* 'I throw it away', *xa-kanoʔc* 'I throw to a distance'; *yakpoʔc* 'I hit him', *xa-ikapoʔc* 'I hit him with force'.

Verbal suffixes are more numerous, indicating negation, number, aspect, tense, subject, mode, and subordination. The suffix *-ape-* is negative: *yakp-ap-oʔc* 'I do not hit him'. Modes include a declarative *-we/-o*, assertive *-aʔa*, exclamatory *-kwa*, interrogative *-ʔ*, intentive *-ʔa·haʔa/-a·ʔ*, imperative *-u*, and potential *-ʔa·/-ʔai*. Each may be further marked for tense. Declaratives may be in the present (*-ʔe*), past (*-ʔei*), near future (*-a·to-*), or remote future (future + past). There are six subordinating suffixes with meanings such as 'but, when, while, as, if, and'. There are also two participial suffixes and a nominalizer *-an*: *heilapa-* 'to stand up, arise', *heilap-an* 'tree'.

Modal enclitics include a declarative for completed action, interrogatives meaning 'have (you) done . . .', 'are (you) certain of . . .', a resultative 'having done . . .', a hortatory 'let's!', and quotatives for general hearsay and myths. Subordinating enclitics contribute meanings 'because', 'as, while', and 'but, except'.

Noun stems are also often compounds, consisting of a noun plus noun (*kal-ʔok* 'mouth-hair' = 'moustache'), a noun plus adjective (*ʔapanu·c-yeikaʔai* 'fly-big' = 'horsefly'), or a noun plus verb (*nepaxkan-pilil* 'tobacco-to.wrap.up' = 'cigarette'). Suffixes mark definiteness (*-ʔa·*), number (*-l* for singular, *-k* for plural), and case (nominative, accusative, datives 'to' and 'toward', instrumental, genitive). A conjunction *-ʔen* is suffixed to both elements of conjoined nominals: *ʔewac-ʔa·-l-ʔen xʔa·i-ʔa·-l-ʔen* . . . 'her father and her mother [said ...]'.

Independent pronouns are used only for contrast or emphasis. The pronominal

roots are *ca·-* for first person, *na·-* second, and *ʔa-* third. They are inflected for nominative, accusative, or genitive case, and singular, dual, and plural number. Demonstratives distinguish aforementioned entities, those in the immediate vicinity, those a certain distance away, and those more remote. They, too, may be inflected for nominative, accusative, or dative case.

Basic constituent order is SOV, though the case marking permits easy recovery of the roles of nominals when alternative orders are used for pragmatic purposes.

The excerpt below comes from a text recorded by Hoijer (1933: 140-1.) (The abbreviation SUB stands for SUBORDINATOR, NARR for NARRATIVE.)

ha·c-sokonai-la	*ha·-na-no-k=lakno?o*	*ʔe·-no-la*
land-own-NOM.SG	move.SG-away-CONT-PARTICIPIAL=NARRATIVE	be-CONT-NM
Coyote	was going along, it is said	when

'Coyote was going along, it is said, and while so doing,

na·ton-ʔa·-yʔik	*ha-ico-na-t*	*heilapa-no-k=lakno?o.*
mountain-DEF-DAT	move.SG-up-away-SUB	stand-CONT-PARTICIPIAL=NARRATIVE
to a mountain	ascending	he was standing, it is said.

he climbed a mountain and was standing there.

ʔe·-l-ʔok	*na·ton-wa·-ʔa·-lak*	*ʔa·yai-ʔa·-yʔik*
happen-3-SUB	mountain-aforementioned-DEF-ACC.SG	below-DEF-DAT
it happened	that mountain aforementioned	below

It happened that below that mountain

yacoxʔ-an-a·naxok	*ye·la-k=lakno?o-lak.*
build.tipi-NOMINALIZER-large	be-3-PARTICIPIAL=NARRATIVE-ACCUSATIVE.SG
a large camp	there was, it was said

there was a large camp.

ha·c-sokonai-la	*ha-kla-na-t*	*yacoxʔ-an-a·naxok-wa·-yʔik*	*xa·xa-t*
land-own-NOM.SG	move-down-away-SUB	build.tipi-NM-large-afore-DAT	arrive-SUB
Coyote	descending	to the aforementioned big camp	arriving

Coyote, descending, arrived at that large camp.

holau-ʔa·-yʔik	*xa·xa-l-ʔok*	*yacoxʔ-an-ʔa·yai-ʔa·-yʔik*	*ma·ka-no-k=lakno?o.*
last-DEF-DAT	arrive-3-as	b.tipi-NM-under-DEF-DAT	weep-CONT-PARTICIP=NARR
at the last	as he arrived	inside the tipi	one was weeping it is said

As he came to the last (tipi), (he heard someone) weeping inside the tipi.'

TSIMSHIANIC FAMILY

Maritime = Tsimshian = Lower Tsimshianic: *Coast Tsimshian = Tsihsmiah proper = Sm'algyax̱, Southern Tsimshian = Sgüüx̱s*

Interior = Nass-Gitksan: *Nisqa'a = Nisga'a = Nisgha = Nishga = Niska = Nass, Gitksan = Gitksanimx̱ (Eastern, Western)*

Languages of the Tsimshianic family are spoken in northern British Columbia and southeastern Alaska. The name *Tsimshian* comes from their name for the Skeena River, *Ksian*, with placename locative *k=*, preceded by *ts'm=* 'inside of an object': *ts'm=k=sian* 'inside the Skeena River' (Mulder 1994). Relations within the family are discussed in Dunn 1979. In 1921 Sapir proposed that the Tsimshianic family might constitute a northern outlier of the Penutian stock. Such a relationship is not considered demonstrated, but the possibility remains under investigation (DeLancey, Genetti, & Rude 1988, Tarpent 1997).

Coast Tsimshian or Sm'algyax̱ ('real language') is now spoken fluently by perhaps 500-800 adults along the lower Skeena River around its mouth (Jean Mulder p.c. 1992). Communities are at Klemtu, Hartley Bay, Kitkatla, Kallum, Kitselas, Old Metlakatla, and Lax K'walaams (Port Simpson) in British Columbia and, since 1887, New Metlakatla in Alaska. There are also speakers in the towns of Terrace and Prince Rupert. Southern Tsimshian or Sgüüx̱s ('the language beside'), the original speech of Klemtu, was essentially undocumented before the work of John Dunn. It represents a very conservative dialect of the Coast Tsimshian language, sometimes classified as a separate language (Dunn 1979a, 1991). It lost speakers when most moved to the mission settlement in Hartley Bay and switched to Coast or Heiltsuk. The number of speakers remaining can be counted on one hand (Marie-Lucie Tarpent p.c. 1997).

For the Interior, Rigsby 1987 reports that Nisgha and Gitksan are mutually intelligible, but the communities consider themselves ethnically distinct. Nisgha is spoken fluently by 700-1000 along the lower Nass River, north of the Skeena, in four villages in British Columbia: Kincolith, Greenville, Gitwinksihlkw (Canyon City), and (New) Aiyansh. Gitksan dialects ('people of the Skeena River') are spoken by around 1000 adults in seven villages along the Skeena River (Bruce Rigsby p.c. 1996): Cedarvale (Miinhl Sginist), Kitwanga (Gitwangax̱), Kitwancool (Gitwinhlguu'l or Gitanyaaw), Kitseguecla (Gijigyukwhla, later split into Carnaby or Sii Ts'eets'ixs and Andimoohl or Adaawax̱hl Gijigyukwhla), Hazelton (Git-an'maaxs or Git-an'maaks), Glen Vowell (Sigit'ox̱), and Kispiox (Gisbayakws).

A survey of early work on Coast Tsimshian is in Mulder 1994. Published 19th-century vocabularies include material collected by William Fraser Tolmie, who served as Surgeon to the Hudson's Bay Company (Scouler 1841: 215-50, Tolmie & Dawson 1884), by John Kennedy, Chief Trader of the Hudson's Bay Company (Gibbs & Dall

1877), and by George Gibbs of the BAE. Missionaries William Duncan and William Ridley translated liturgical materials. Ridley's interpreter, Mrs. O. Morison of Metlakatla, published 16 proverbs with analysis in 1889. Between 1886 and 1889 Franz Boas worked with both Coast Tsimshian and Nisgha. His material, along with Ridley's translations of the Gospels, formed the basis of an extensive grammar in German published in 1894 by von der Schulenberg (Flaherty 1982). In 1902 Raoul de La Grasserie published descriptions of five B.C. languages, including Coast Tsimshian, drawing material from Tolmie & Dawson 1884, Ridley's translation of Matthew, and Schulenberg. Boas' early fieldwork yielded wordlists (1891), a grammatical sketch (1889b), and texts (Boas 1886, 1895). Important contributions were also made by Tsimshian-speaking scholars. Between 1902 and 1914 Henry W. Tate, of Port Simpson, sent texts to Boas in Ridley's orthography with interlinear translation. One was published with grammatical notes (Boas 1908), six were edited with help from another speaker, Archie Dundas of Metlakatla (Boas 1912), a number were published only in English (1916), and others remain unpublished. In 1911(d), Boas published a larger grammatical sketch based on his own fieldwork with Coast and Nisgha and Tate's texts. Another Tsimshian scholar, William Beynon, learned to transcribe Coast, Nisgha, and Gitksan from Maurius Barbeau. Between 1915 and 1956 he sent Barbeau over 60 notebooks of mostly English texts with some Coast vocabulary (Cove & MacDonald 1987). Between 1932 and 1939 he sent 252 narratives and ethnographic reports to Boas, some revisions of the Tate texts. Some of these texts have been retranslated and retranscribed in Hayward 1980, 1983a,b,c.

More recently extensive work on Coast Tsimshian has been carried out especially by John Dunn and Jean Mulder. Phonology is described in Dunn 1970, 1980a, 1986; Dunn & Hays 1981, 1983; and Sasama 1995, 1997. Dunn has also published descriptions of reduplication (1979b, 1980b), derivational suffixes (1983), tense and aspect (1979c), and relativization (1978a). Of special interest in Tsimshianic languages is ergativity. Ergativity in Coast Tsimshian is discussed in Dunn 1979d, Mulder 1987, 1989a,b, and especially Mulder 1994. Language change and obsolescence are taken up in Dunn 1972 and 1974 and neologisms in Stebbins 1997. A practical gram-mar is in Dunn 1979e and a dictionary in Dunn 1978b, reprinted together in 1995.

Southern Tsimshian was not recorded until 1975. Its genetic position within the family is discussed in Dunn 1979a, and a comparative wordlist is provided. Dunn has discussed phonology (1979a, 1986, 1993) and syntax (1988, 1990, 1991).

Early work on Nisgha is described in Tarpent 1989. Boas gathered Nisgha legends in Kincolith in 1894 and published them in 1902 with interlinear and free translations. His 1911 grammatical sketch covers Nisgha as well as Coast Tsimshian. Nisgha phonology is discussed in Tarpent 1990. Plural formation is described in Tarpent 1983, possessives in Tarpent 1986a, kinship terms in Sapir 1920d, arguments and

adjuncts in Tarpent 1988, and complex copular clauses in Tarpent 1991. Ergativity in Nisgha, as in Coast Tsimshian, has been a focus of interest (Tarpent 1982, 1989, Belvin 1985, 1990a,b, and Jelinek 1986). A detailed reference grammar is in Tarpent 1989 and a dictionary is in Tarpent 1986b.

For Gitksan, there is a dictionary in Hindle & Rigsby 1973 and a 422-page grammar of which excerpts were published in Rigsby 1986. Studies of phonology have focused on glottalization and voicing (Wikstrom 1974, Hoard 1978b, Hunt 1990, Ingram & Rigsby 1987, Rigsby & Ingram 1990). In syntax, special attention has been paid to ergativity (Rigsby 1975, 1989, Rood 1977b, 1993) and the syntactic status of pronouns (Hunt 1991). Rigsby 1970 describes speech play.

The family is bordered to the north by Tlingit and the now extinct Athabaskan Tsetsaut, to the east by the Athabaskan Sekani and Carrier, to the south by Wakashan Kwakwala, and to the west, on the Queen Charlotte Islands, by Haida. The Tsimshianic languages share a number of features typical of the Northwest Coast, as well as some vocabulary with their neighbors. Striking features include their large consonant inventories, elaborate spatial distinctions, noun incorporation, and extensive ergativity. Examples cited here are Nisgha, drawn from Tarpent 1989.

The Nisgha phonological inventory is typical of the Northwest coast, with plain stops *p, t, c, k, k^w, q*, ejectives *p̓, t̓, c̓, k̓, k̓^{w}, q̓*, fricatives *s, ɬ, x, x^w, χ*, plain resonants *m, n, l, y, w, h*, and glottalized resonants *m̓, n̓, l̓, y̓, w̓*, and *ʔ*. (The *t* series is dental, and *c* is a somewhat palatalized affricate. The velars are in most contexts palatal.) Syllable structure may be complex: *tk̓ú·c̓ilksk^w* 'heavy windstorm', *ʔanχsksí·sk^w* 'compensation for a crime'. Vowels contrast in length: *i, e, a, o, u; i·, e·, a·, o·, u·*. Stress is not fully predictable, though it usually falls on the root.

The internal structure of words is generally hierarchical, built up in layers rather than consisting simply of strings of morphemes. Words may be based on a single root, such as *páq* 'to feel, try something', or *y̓ím* 'porcupine quill', or on an augmented root, that is, a root plus a preceding or following consonant, such as *s-páq* 'to taste' or *y̓ím-q* 'whiskers'. The meanings of the augments are not now usually identifiable. To the bases may be added derivational affixes: *spáq-ʔask^w* ('taste'-ANTIPASSIVE) 'to taste things, to have the sense of taste'; *y̓ímq* 'whiskers', *ksə-y̓ímq-k^w* ('remove-whiskers-MIDDLE') 'to shave'. Full and partial reduplication occurs extensively, operating on roots, bases, or stems, to indicate plurality and aspect.

Nisgha contains a large inventory of derivational affixes, some that appear only with one word class such as nouns, others that appear with several different classes. The prefix *qal-* 'empty, empty place for, without showing', for example, appears with both nouns (*ʔamí* 'voice', *qal-ʔamí* 'throat') and verbs (*w̓útk^w* 'be.back', *qal-w̓útk^w* 'to come back empty-handed from hunting'). Some derivational affixes leave lexical categories unchanged, while others alter them. The prefix *liks-* 'different, abnormal,

improper', combines with nouns to form new nouns (*y̓áns* 'leaf', *liks-y̓áns* 'weeds'), with verbs to form nouns (*t̓á:* 'sit', *liks-t̓á:* 'island'), and with verbs to form adjectives (*kát* 'to fare', *liks-kát* 'different').

Some of the affixes show grammatical meanings that are common cross-linguistically. There are distributive and plural markers, and progressive and completive aspectual markers. Some affixes affect valence (the number of major participants specified in a clause). Some of these derive causatives, like *tə-* (*yé* 'to walk', *tə-yé* 'to take someone for a walk'), *kʷin-* (*c̓ín* 'to enter', *kʷin-c̓ín* 'to tell someone to come in'), and *-ʔn* (*ké:ɬ* 'to lie', *ké:ɬaʔan* 'to lay something down, put someone to bed'). Others derive middles, reflexives, and passives (*kʼʷás* 'to shatter', *kʼʷás-T* 'to be shattered'; *sə-kámk* 'make-hot', *səkámk-s* 'to warm oneself'; *máq* 'to put something away', *máq-kʷ* 'to be put away'); and antipassives (*mát* 'to tell something', *mát-ʔskʷ* 'to preach').

Like several other languages of the Northwest Coast, Nisgha contains affixes whose meanings seem more typical of roots. One set, with verb-like meaning, are prefixed to nouns to derive new verb stems. The prefix *sin-* 'to chase, go after, try to catch', for example, is added to the noun *ɬ̓ipin* 'sealion' to yield *sin-ɬ̓ipin* 'to hunt sealions'. The meanings of these prefixes are often quite general, such as *sə-* 'to bring into use, pick, harvest, catch, process': *sə-hó:n* 'to catch and process salmon', *sə-má:y̓* 'to pick berries', *sə-kó:fi:* 'to make coffee'. Other prefixes of this type are *hi:-* 'to go to' (*hi:-qaltimwó:t̓* 'to go to the store'), *tu:-* 'get' (*tu:-lákʷ* 'to get firewood'), *ɬ̓il-* 'to be in charge of' (*lú:laq̓* 'corpse', *ɬ̓il-lú:laq̓* 'to be in charge of funeral arrangements'), *x̱-* 'to eat/drink/consume' or 'lay claim to' (*x̱-miy̓é:n* 'to smoke (tobacco)'), *yu:-* 'to manipulate skillfully' (*yu:-ʔanúɬ* 'to play the drum'), *ʔis-* 'to smell of' (*ʔis-hó:n* 'to smell of fish'), *kʷa:s-* 'to borrow' (*kʷa:s-tá:la* 'to borrow money'), and *si:p-* 'to have a . . . ache' (*si:pɬ̓imqís* 'to have a headache'). Some create transitive verbs, such as *ksə-* 'remove': *ksə-má:s* (remove-peel) 'to peel something'. Tarpent notes that these constructions probably originated as compounds.

Another set of prefixes with root-like meanings derive nouns. The prefix *ʔantə-*, for example, designates a 'small, portable, closable container' (*hawíl* 'arrow', *ʔantə-hawíl* 'quiver'). The prefix *qaltim-* derives names for large, open containers (*lákʷ* 'firewood', *qaltim-lákʷ* 'fireplace'; *láqs* 'bathing', *qaltim-láqs* 'bathtub'). The prefix *ksə-* adds the meaning 'fresh' or 'water, fluid, juice, sap' (*smáx* 'meat', *ksə-smáx* 'fresh meat'; *mó:c̓iks* 'breast', *ksə-mó:c̓iks* 'mother's milk'). The prefix *saxs-* means 'boat, ship for' (*ʔá:t* 'fishnet', *saxs-ʔá:t* 'fishing boat'). The prefix *sq̓an-* is used for supports (*má:y̓* 'berry', *sq̓an-má:y̓* 'berry bush'; *hałóʔ* 'sail', *sq̓an-hałóʔ* 'mast').

A large set of loosely attached verbal prefixes specify location and direction. The prefix *laqam-* 'into something at the top', for example, is combined with the root *páx* 'run' in *laqam-páx* 'to go aboard, get into a car'. Some of these prefixes have relatively general meanings such as *lu:-* 'in' (*t̓á:* 'sit', *lu:-t̓á:* 'to be in something, especially to be at home or in jail'). Others are more specific, such as *q̓altix-* 'deep in the woods, not visible from the village' (*yé:* 'go', *q̓altix-yé:* 'to go into the woods'). A fuller list of the locative prefixes is in section 3.7.3.

Other prefixes indicating location derive nouns. The prefix *c̓im-*, for example, means '(the) inside of, in, into' (*c̓im-wílp* 'interior of a house'). The prefix *lax-* indicates a 'top surface of, site of, on' (*ʔúmɬkʷ* 'sphagnum moss', *lax-ʔúmɬkʷ* 'swamp'). The prefix *spə-* is 'den, abode' (*smáx* 'bear', *spə-smáx* 'bear's den').

Compounding is extremely productive in Nisgha. There are compound nouns, verbs, and adjectives. The head of the compound is always the first element, but primary stress falls on the second. In some compounds, the components are simply juxtaposed: *wìlp-kúkʷ* 'house-cook' = 'kitchen', *x̱pè:qs-lákʷ* 'saw.something-wood' = 'to saw wood'. In others, a 'mediating suffix' follows the first element: *ʔanà:s-a-ʔúl* 'skin-MED-bear' = 'bearskin', *simiy̓è:n̓iskʷ-m-hó:n* 'smoke.food-MED-fish' = 'to smoke fish'; *ʔalàysT-m-náks* 'reluctant-MED-married' = 'to be reluctant to get married'. Verb-noun compounds, i.e. noun incorporating constructions, are used to 'designate activities which are part of normal life' (Tarpent 1989: 791). Thus while the clause *q̓úɬ-ə-y̓=ɬ hó:n* (gut.something-CONTROL-1SG=NON.DET fish) is translated 'I gutted a/the fish', the incorporating construction *q̓ùɬ-hó:n n̓ì:y̓* (gut.something-fish me) is 'I gutted fish'. Tarpent notes that unmediated verbal compounds generally describe an action performed on a single occasion, applying to all items available ('to wash dishes'), while mediated compounds indicate more leisurely or lengthy action ('to smoke fish').

Most clauses consist of a predicate phrase optionally followed by nominals. The core arguments of every clause are specified by pronominal elements that show an ergative/absolutive pattern. Absolutives, that is, the single major participant of an intransitive clause or the second argument (often a patient) of a transitive clause, are identified by a pronominal suffix on the predicate, like *-y̓* 'I/me' and *-n* 'you' below.

wil	*ɬimó:m̓iskʷ-y̓*		*mə*	*wil*	*ɬimó:m-y̓*
when	help.out-1SG.ABS		2SG.ERG	when	help-1SG.ABS
'when I helped out'			'when you helped me'		
wil	*ɬimó:m̓iskʷ-n*		*nə*	*wil*	*ɬimó:m-n*
when	help.out-2SG.ABS		1SG.ERG	when	help-2SG.ABS
'when you helped out'			'when I helped you'		

In transitive clauses, the ergative is indicated by a pronoun at the beginning of the clause, like the *nə* 'I' in 'when I helped you' and *mə* 'you' in 'when you helped me'. First and second person ergative pronouns ('I' and 'you') precede subordinators like 'when', as above; third person ergatives follow them as enclitics.

wil=ɬ *ɬimó:m-ɬ*
when=3ERG help-3ABS
'when she helped him'

The referent may be further identified with a nominal, linked to the predicate by an enclitic termed a 'connective'. There are two connectives, the determinate *=s* (DET) used before proper names, pronouns, or determiners referring to persons, and the non-determinate *=ɬ* (NON.DET or N.D.) before others. Determinate nouns are also preceded by the particle *t*, which is deleted in the phonological context before *=s*.

wil *ɬimó:mísk^{w}-ɬ*
when help.out-3
'when s/he helped out'

wil *ɬimó:mísk^{w}-(t)=s* *t* *Mary*
when help.out-3=CONN DET Mary
'when Mary helped out'

If several nominals follow the predicate, they appear in the order ergative-absolutive.

		ERGATIVE		ABSOLUTIVE	
wil=t	*ɬimó:m-(t)=s*	*(t)*	*Mary*	*t*	*Lucy*
when=3ERG	help-3=CONN	DET	Mary	DET	Lucy

'when Mary helped Lucy'

The Nisgha connectives are used not only to link predicates and arguments, but also main and subordinate clauses, conjunctions and nominals, prepositions and nominals, numerals and nominals, and possessions and possessors.

ká?-(t)=ɬ *?anhè:-(t)=ɬ* *qá:q* *?a=ɬ* *ké:w=sa*
see-(3)=N.D.CONN saying-(3)=N.D.CONN raven PREP=N.D.CONN on.beach=PROX
'Go see what the raven is cawing about on the beach!'

Predicates do not usually occur alone, but are introduced by another element such as a subordinator (*wil* 'when', *ɬa:* 'by now'), auxiliary, or negative. An evidential may be cliticized to the end of the predicate phrase: *ɬa:na?ks-t=qat* 'by.now married-3ABS=REPORTATIVE' = 'I hear s/he is married now.'

Nominals may be enumerated. There are four sets of numeral predicates, one for humans, one for animals, one for canoes/boats, and one for other objects: *paqalɬl-(t)=ɬ ɬkì-y̓* 'two.persons=NON.DET.CONN child.PL=1SG' = 'my children are two'. Possession is indicated by a suffix on nouns. The possessive suffixes have the same shapes as the absolutive suffixes on predicates: *wílp-y̓* (house-1SG) 'my house'; *wílp-t* 'house-3SG' = 'his/her house'. The possessor may be specified by a following noun,

linked with a connective: *wìlp-(t)=s (t) Peter* 'house-(3)=DET.CONN Peter' = 'Peter's house'. Distribution of possession may be shown by *qa-*: *qa-hu-wílp-ti:t* 'DISTRIBUTIVE-PL-house-3PL = 'their houses', where each has a house. Alienated possession is marked by the particle *ɬə*. These include parts of wholes, such as severed body parts and kin of animals but not people: *ɬə ɬimqìs-t* 'INALIENABLE head-3SG' = 'it's head'; *ɬə mà:s-(t)=ɬ sku·sí:t* 'INALIENABLE bark-(3)=NON.DET potato' = 'potato peel'. Bodily emanations, such as mucus, sweat, and lice, and intangibles such as soul, sin, traditions, tribe and village, are also classified as alienated: *ɬə ?ó:c̓ín-y̓* 'INALIENABLE soul-1SG' = 'my soul'.

Some of these structures can be seen in the excerpt below recorded by Boas in Kincolith in 1894 from Moses (Boas 1902: 117) and retranscribed and analyzed by Tarpent (1989: 503). In it can be seen the non-determinate connective *=ɬ* linking predicates and following arguments ('stand _ little house'), and the conjunction *qan* and the following conjunct ('and _ his grandmother'). The third person pronominal suffix *-t* can be seen representing the argument 'it' of the verb 'stand' and the possessor 'his' of 'name' and 'grandmother'. The plural pronominal suffix *-ti:t* represents the possessor 'their' on 'house'. The distal clitic *=ki:* appears at the ends of clauses.

k̓ó:l=ɬ *ɬkˌu-tk̓ìɬk^{w}=ki:*
one (person)=NON.DETERMINATE.CONNECTIVE little-child=DISTAL
'There was a boy

c̓ák=ɬ *wà-t=ki:*
Ts'ak=NON.DETERMINATE.CONNECTIVE name-3=DISTAL
named Ts'ak

qan=ɬ *ɬkˌu* *nic̓i:c̓-t*
and=NON.DETERMINATE.CONNECTIVE little grandmother-3
and his grandmother

n̓i(t)=ɬ *kˌi:* *húk^{w}-(t)=ɬ* *ɬkˌu* *wìlp-ti:t=kˌi:*
that's=NON.DET.CONN and stand-(3)=NON.DET.CONN little house-3PL=DISTAL
and they had a little house.'

Tunica*

The Tunica were first encountered by the French at the end of the 17th century on the lower Yazoo River 20 miles from its mouth, near present Vicksburg, Mississippi. In the late 18th or early 19th century they dispersed, most remnants of the group moving to near present Marksville, Louisiana. The language was spoken into the mid-20th century by Sesostrie Youchigant, who was born in 1870.

Tunica is not closely related to any other language. A remote relationship has been hypothesized linking Tunica with Atakapa, Chitimacha, Natchez, and the Muskogean languages, a group referred to as the Gulf languages (Swanton 1919, Haas 1948b, 1951, 1952, 1958b, 1960).

Surveys of sources on Tunica are in Haas 1973a, 1979a, and Crawford 1975. Booker 1991a provides a detailed annotated bibliography. Documentation of the language comes from only three fieldworkers. Gatschet collected vocabulary and texts in 1886, some of which served as a basis for a discussion of masculine and feminine gender (1889). Swanton used the Gatschet material and more that he collected in 1907, 1908, and 1910, for a comparison of Tunica with Atakapa and Chitimacha (1919) and a grammatical sketch (1921). Haas worked with the last fluent speaker between 1933 and 1939, producing extensive documentation of the language: a full grammar based on textual material (1941d), grammatical sketch (1946b), text collection (1950b), and dictionary of forms from all sources (1953). Additional published work includes descriptions of French loanwords (Haas 1947b) and the auxiliary system (Haas 1977c). Forms cited here are from Haas 1941d.

Tunica consonants include stops *p, t, č, k, ʔ*; fricatives *s, š, h*; nasals *m, n*; liquids *l, r*; and glides *w, y*. The *r* is unusual in the area. In addition, *b, d, g*, and *f* appear in loans. Vowels are *i, e, ɛ, a, ɔ, o*, and *u*. Haas reports that due to 'sweeping external sandhi phenomena, the smallest phonetic group of Tunica is the phrase' (1941d: 13). She describes internal and external contraction patterns and the various melodic contours of phrases. Words in phrase-final position have special 'pause' forms and melodies: *ta´ruštaku* (medial) vs *ta´rušťáku* (pause) 'Rabbit'; *ka´ta* vs *ka´ťán* 'where'; *rí* vs *ri´ʔíṉ* 'house'. Their grammatical relevance is discussed in Trager 1941.

Noun stems may be simple roots (*rúšta* 'rabbit'), compound (*ʔóni+rɔ́wa* 'person + white' = *ʔónrɔwa* 'white person'), or derived. Derivational affixes include an augmentative (*rúšta-tʔɛ* 'rabbit-AUGMENTATIVE' = 'sheep'), diminutive (*kúwa-tóhku* 'duck-DIMINUTIVE' = 'bird'), and agentive nominalizer (*tá-hára* 'AGENTIVE.NOMINALIZER-sing' = 'singer'). Some verbs and adjectives are used as noun stems with no change in shape (*hára* 'sing' = 'song'; *nísara* 'young' = 'young person').

Nouns may appear alone (*rúšta* 'a rabbit; rabbits'), with an articular prefix 'the/some' (*tá-čɔhă-ku* 'the-chief-MASCULINE.SG'), or a possessive prefix (*ʔi-ési-ku* 'my-father-MASCULINE.SG' = *ʔésťiku* 'my father'). There are two sets of possessive prefixes, one used with inalienable possessions such as kinsmen, body parts, and some others like 'breechcloth', 'clothing', and 'name', the other with alienable possessions (*ʔihk-ʔóni-sémăn* 'my-person-MASCULINE.PL' = 'my people'). First, second, and third person possessors are distinguished. In both second and third persons, masculine and feminine gender are distinguished. Singular and plural are distinguished throughout, with separate dual and plural forms for third person masculine possessors.

As can be seen from the above examples, nouns with an article or possessive prefix appear with a suffix marking the gender and number of the referent: masculine singular, masculine dual, masculine plural, feminine singular, or feminine dual-plural. All entities, animate and inanimate, are assigned gender. There are also three locative suffixes: *ʔú-ri-š* 'his-house-at' = 'at his house'; *tá-sapʔara-štťihk* 'the-west-to' = 'to the west'; *tá-hal-ťăn* 'the-ground-onto' = 'onto the ground'. The gender-number suffixes do not appear with the locatives.

Verb stems may be simple (*lɔ́ta-wi* 'he ran'), compound (*hára-hípu-tťihč* 'when she sang and danced' from *hára* 'sing' and *hípu* 'dance'), or derived. Suffixes add meanings like 'constantly' (*ʔamékaťahkʔúʔuanáni* 'they were constantly quarreling'), 'already' (*náhapʔakéni* 'she had already gone to bed'), 'about to' (*ʔuhťápilaťihč* 'when she was about to catch him'), purpose (*ʔúkiwan yákʔahkiní* 'I have come to stay').

On the basis of their inflectional patterns, Haas classifies verbs as active, static, or auxiliaries. Active verbs contain a pronominal suffix referring to their agent: *lɔ́ta-wi* 'run-3MASCULINE.SG.AGENT' = 'he ran'. If transitive, they also contain a pronominal prefix referring to their patient: *ʔihpékʔɔntá* = *ʔihk-pék-ʔɔn-ta* '1SG.PATIENT-hit-3MASCULINE.PL.AGENT' = 'they hit me'. These patient prefixes match the alienable possessive prefixes on nouns. Impersonal verbs contain a third person feminine singular agent: *šíhtuna yáťihč* = *šíhtuna yá-ti-hč* 'dark become-3FEMININE.SG.AGENT-SUBORDINATE' = 'when it got dark'. Reciprocal action is also indicated with a prefix: *ʔakʔéhʔunihkí* 'they kicked each other'.

Static verbs contain a pronominal prefix referring to their patient: *tí-yaší* '3FEMININE.SG.PATIENT-be.angry' = 'she is angry'. These patient prefixes match those used to indicate inalienable possession. Static verbs denote emotional or physical states: 'be 'ashamed', 'afraid', 'happy', 'excited' 'hungry', 'intoxicated', 'cold', 'thirsty', 'tired', 'old'.

Auxiliaries generally show irregular forms. All but one of the auxiliaries also appear as full verbs, with meanings 'be, exist, live', 'lie', 'sit', 'live/camp/remain', 'come', 'go', 'cause', and 'live'. As auxiliaries they bear inflection and may add meaning. The auxiliary 'lie', for example, adds durative meaning (*lɔ́ta-hk-ʔúrana=áni* 'run-HABITUAL-lie.3MASCULINE.DU.SEMELFACTIVE=HEARSAY' = *lɔ́tahkʔúranáni* 'they were running'.

Semelfactive, progressive, repetitive, and conditional are specified inflectionally. Location and direction can be shown by proclitics: *ʔúnir kí=ʔuhpékʔuhkéni* 'he hit

him in the teeth'. Negation is indicated by enclitics: *ʔiyáš̌ʔɛʔé* = *ʔi-yáši=ʔaha* 1SG.PATIENT-angry=NEGATIVE 'I am not angry'. Other enclitics mark hearsay evidence, questions, commands, and future subjunctive.

A sentence may consist of a single verb: *pútahkʔunánì* 'He was walking along, it is said.' Constituent order is basically SOV, although there is considerable fluidity. Clauses may be conjoined by intonation alone or by an enclitic on the first clause: *hárati=man híp̓ʔɔkénì* 'She sang and danced it is said.' Dependent clauses precede matrix clauses and contain a subordinating enclitic: *tiyánawǐ=hč* 'when he spoke to her'. Relative clauses are marked by a gender-number suffix on their predicate: *tónisémăn, táheritʔɛ kíčŭn, ʔúkʔèrasémăn* 'the people who were in the boat' (*t-ʔóni-séma* 'the-person-MASCULINE.PL','*ʔúkʔera-séma* 'sit.3MASCULINE.PL-3MASCULINE.PL'). The associated noun sometimes appears with its own gender-number suffix, as here, sometimes without.

The lines below are from a text told by Sesostrie Youchigant (Haas 1950b: 18-19).

támarɔ́hăš,	*táyoronǐku,*	*hopíʔuhkénì.*
támarɔ́ha-ši	*tá-yór-oni-ku*	*ho=pí-ʔúhki=áni*
mountain-LOC	the-Tunica-person-M.SG	out=go-be.AUX.3M.SG=HEARSAY

'The Tunica emerged, it is said, from (the mountain) támarɔ́ha.

hínahkŭhč,	*tɔ́mahkamúlǐku,*	*tɔ́mahkaʔɔ́štakʔɔ́măn,*
hí=nahku=hč	*t-ʔɔ́mahka-míli-ku*	*t-ʔɔ́mahka-ʔɔ́šta-ku=ʔáma*
this=like=SUBORD	the-alligator-red-M.SG	the-alligator-blue-M.SG=with

Now a red alligator and a blue alligator

híhč	*ʔatépǐn,*	*léhpináʔunihkénì.*
hí-hči	*ʔa-tépi*	*léhpi-ná-ʔúnihki=áni*
this-now	RECIPROCAL-X	stop.up-lie-be.AUXILIARY.3MASCULINE.DU=HEARSAY

lay side by side, it is said, closing up this place.

hínahkŭhč,	*tɔ́mahkamúlǐku,*	*nélahílawǐhč,*
hí=nahku=hč	*t-ʔɔ́mahka-míli-ku*	*néla-híla-wi=hč*
this=like=SUBORD	the-alligator-red-M.SG	roll-move-MSG.SML=SUBORD

Now when the red alligator rolled over,

rúwina	*pánu*	*yákaténì,*	*tíhakatépàn.*
rúwina	*pánu*	*yá-káti=áni*	*tíha=tépan*
hot	very	turn-3FEMININE.SG.HABITUAL=HEARSAY	year=every

it would get very hot, it is said, every year.'

UTIAN = MIWOK-COSTANOAN FAMILY

- MIWOK = MIWUK = MOQUELUMNAN
  - EASTERN MIWOK
    - SIERRA MIWOK
      - **Northern Sierra Miwok:** *Camanche, Fiddletown, Ione, West Point*
      - **Central Sierra Miwok:** *East Central, West Central*
      - **Southern Sierra Miwok:** *Yosemite, Mariposa, Southern*
    - **Plains Miwok:** *Jackson Valley, Lockford*
    - **Saclan = Bay Miwok***
  - WESTERN MIWOK
    - **Coast Miwok*:** *Bodega, Marin*
    - **Lake Miwok**
- COSTANOAN*
  - **Karkin = Carquin**
  - **Northern Costanoan:** *Chocheño = East Bay (Juichin = Huichin, San Lorenzo, Niles, San Jose), Ramaytush = San Francisco, Tamyen = Santa Clara, Awaswas = Santa Cruz*
  - **Soledad = Cholon**
  - SOUTHERN COSTANOAN
    - **Mutsun = San Juan Bautista**
    - **Rumsen = Runsien:** *Carmel, Monterey*

Utian languages (from their words for 'two'), are indigenous to central California. The Sierra Miwok languages (from Northern Sierra Miwok *miw·yk* 'people, Indians') were spoken on the western slopes of the Sierra Nevada Mountains. Plains Miwok was spoken earlier in the southern Sacramento and northern San Joaquin Valleys from Ione to Stockton; Saclan around Mount Diablo near present Lafayette, Walnut Creek, and Danville; Lake Miwok 80 miles north of San Francisco at the south end of Clear Lake; and Coast Miwok from the tip of the Marin peninsula north to Bodega Bay. Callaghan compares the distances among the Miwok languages to those among the Germanic languages. The Costanoan languages (from Spanish *costaños* 'coast people'), were spoken in three dialect areas from the Carquinez Straits at the north end of San Francisco Bay south along both sides of the bay to Big Sur. All Costanoan peoples were absorbed very early into the seven Franciscan missions founded in their territory, so little is known about their earlier communities. Saclan is no longer spoken, and a very few speakers remain of the other Miwok languages. Costanoan has apparently been gone since the 1940s.

In 1877 Gatschet related Miwok and Costanoan under the name Mutsun on the basis of scant evidence, but Powell listed them as separate families in 1891. Kroeber

(1904: 29-80, 1910) noted similarities and in 1913, he and Dixon combined them with Maiduan, Wintun, and Yokutsan into the Penutian stock. As better documentation has become available, the Miwok-Costanoan relationship has been amply demonstrated by the extensive, detailed work of Callaghan (1967, 1982, 1983, 1986a, 1988a).

Early documentation of Miwok languages is in Powers 1877, Barrett 1908a, and Kroeber 1911: 278-91. More recent work includes a Southern Sierra Miwok grammar with dictionary and texts (Broadbent 1964); a Central Sierra Miwok grammar (Freeland 1951), dictionary with texts (Freeland and Broadbent 1960), and collection of myths (Berman 1982); a Northern Sierra Miwok dictionary (Callaghan 1987b); a Plains Miwok dictionary (Callaghan 1984); a Lake Miwok grammar (Callaghan 1963), dictionary (Callaghan 1965), and texts (Callaghan 1977a, 1978, 1980a); a Western Miwok sketch with texts (Freeland 1947); and a Bodega Miwok dictionary (Callaghan 1970). Sloan 1991 discusses the phonology of Southern Sierra Miwok. For Saclan there is only a short wordlist recorded by Arroyo de la Cuesta in 1821. The list is reprinted with discussion in Beeler 1955a, 1959, and Callaghan 1971. Other work on Miwok reconstruction is in Broadbent & Callaghan 1960 and in Callaghan 1972, 1977b, 1979a,b, 1980b, 1985, 1986b, and 1998.

Documentation of Costanoan languages began early with an 1815 phrase book and 1816 grammar of Mutsun (Arroyo de la Cuesta 1862, 1861). From these materials Mason produced a grammatical sketch in 1916. Other 19th-century Costanoan word lists were published in Kroeber 1910 (Monterey from Kroeber and Taylor, Soledad from Hale, Mutsun from Arroyo de la Cuesta, Santa Cruz from Comelias, San Jose from Kroeber, Santa Clara from Mengarini, and San Francisco from Johnston 1850). Vocabularies of Soledad, Santa Cruz, and Rumsen recorded by Pinart in 1878 are published in Heizer 1952, and lists of Soledad, Rumsen (1884), Santa Clara (1884), and Santa Cruz (1888) from Henshaw are in Heizer 1955. Beeler 1961 includes vocabularies of Karkin and Juichun recorded by Arroyo de la Cuesta in 1821, and of Niles East Bay, recorded by Curtin in 1884, with discussion. Beeler 1972 contains a 1775 North Bay vocabulary from Santa María with discussion. Harrington worked with some of the last people to remember Costanoan, reeliciting earlier material from Chocheño primarily in 1921, Mutsun in 1929, and Rumsen from 1932 to 1939. An extensive grammar of Mutsun based on the Harrington notes is in Okrand 1977. Additional discussion of Costanoan is in Beeler 1955b, 1968, Broadbent 1957, Brown 1973, Shipley 1980a, Adams 1985, Callaghan 1988b, 1990, 1992, 1998, and Okrand 1979a,b, 1980, 1989.

The phonological inventories of all but one of the Miwok languages are similar. They include stops *p*, dental *t* (except in Plains), alveolar *ṭ*, *k*, and *ʔ*; an alveolar or palatal affricate, fricatives *s*, in Central *š*, and *h*; nasals *m*, *n*, and in Sierra *ŋ*; and approximants *w*, *l*, and a palatal glide written *j*. In addition to these consonants, Lake

Miwok also contains aspirated and glottalized series of stops and affricates *c*, *č*, *ć*, *c̓*, and *č̓*. Callaghan 1964 demonstrates that these sounds were borrowed into Lake with lexical loans from unrelated neighboring Patwin, Wappo, and Eastern Pomo. All contain vowels *i*, *e*, *a*, *o*, and *u*. The Eastern languages also contain a high central vowel *ɨ* (written *y*), and in addition, Plains contains *ə*. Both consonants and vowels occur long and short. The syllable canon is CV(·)(C). There is evidence of consonant symbolism: *ʔesel·y-* 'child', *ʔecel·y-* 'baby'; *pu·si-* 'cat', *pu·ci* 'kitty'. These and other examples cited here are Southern Sierra Miwok from Broadbent 1964, with details of the original abstract transcription spelled out by Catherine Callaghan.

The languages are primarily suffixing. Of special interest is an extensive system of stem ablaut involving quantity and metathesis (Smith 1985, Callaghan 1986b). Stems vary in shape according to the suffixes that follow. The Southern Sierra Miwok verb stem 'ask', for example, appears as *hasu·l-*, *hasul-*, *has·ul-*, or *haslu-*. The ablaut can take on a grammatical role when it distinguishes noun from verb stems: *calka-* 'to purge', *cal·ak* 'diarrhea'; *ciwe·l-* 'to weep', *ci·wel-* 'tears'.

Nouns may contain a variety of derivational suffixes, indicating such things as direction (*cyme·c-ak-* 'from the south', *wali-ṭ·y-ṭ-* 'down-ward'), diminutive (*naŋ·a-* 'man', *naŋ·a-c·y-* 'boy'), diminutive plural (*cicka-* 'bird', *cicka-ṭ·i-* 'several small birds'), reciprocal (*pace-* 'relative', *pace-mhi·meti-ʔ* 'relatives to each other'). Other nominalizing suffixes include a habitual (*nocu-* 'to cry', *nocʔu-c·e-* 'one who always cries'), a gerundial (*mulhu-* 'to quit', *mulhu-hak-* 'stopping'), an agentive (*ʔuc·u-* 'to stay', *ʔuc·uʔ-ma-* 'guest'), a patientive (*lo·tu-* 'to catch', *lotuʔ-ku-* 'captive'), and many more. Nouns may then be inflected for possessor with a pronominal suffix (*cuku-nti-ʔ* 'dog-1SG-NOMINATIVE' = 'my dog'). Nouns are not obligatorily marked for number, but they must bear a case suffix. Southern Sierra Miwok distinguishes nine cases: nominative, accusative, temporal, vocative, genitive, ablative, allative, locative, and instrumental. The accusative case is used for direct objects, some indirect objects, and some adverbials, with meanings 'after', 'while', 'during', etc. (*hika·hy-j* 'deer-ACCUSATIVE', *kawlypa-j* 'all morning'). The temporal case is used to specify some times and locations (*ʔiw·i-n* 'today'). The genitive specifies possession or means 'after' (*hika·hy-ŋ* 'the deer's', *henis·eme-ŋ* 'after our resting'). The ablative has the usual meaning 'from' (*ʔu·cu-m·-uʔ* 'from the house'), the allative 'to' (*ʔawa·ja-ṭ* 'to the lake'), and the locative 'at', 'in' (*leme-m* 'on the mountain'). The instrumental is used for instruments (*jaw·e-s* 'with a bow'), and also for the patients or themes of benefactive verbs (*ʔenyhnama· jaw·e-s haja·puj* 'I am making a bow for the chief'). Modifiers agree in case with the nouns they modify.

Verbs may also contain a variety of derivational and inflectional suffixes. Some are adverbial, with meanings like 'bursting out', 'deliberately', in pieces (*te·py-* 'to cut', *tep-la-* 'to cut up'), absently (*ʔyʔwy-ny-* 'to feed', *ʔywny-mhy-* 'to be away feeding').

There are mediopassives (*lep·a-* 'to finish', *lep·a-met·y-* 'to be all gone'), voluntary and involuntary passives (*ʔelŋe-* 'to leave behind', *ʔelŋe-pa-ksy-* 'to be left behind'), benefactives (*myli··na-* 'to sing for someone'), causatives (*jeʔpa-* 'to believe', *jeʔap-nuk·u-* 'to persuade'), reflexives (*komta-poksu-* 'to hit oneself'), a reciprocal (*ʔam·y-* 'to give', *ʔam·y-mhi-* 'to exchange gifts'), and various tense, aspect, and mode markers, including iteratives (*juc-wa-* 'to pull hair repeatedly'), statives (*ha·cy-* 'to stop, *hac·i-c·y-* 'to be standing'), a continuative (*liw·a-put·u-* 'to keep on talking'), a volitional (*ʔywʔy-jny-* 'to want to eat'), and others. These are followed by obligatory pronominal suffixes specifying the core arguments of the verb, the subject and, if transitive, the object: *ʔyw·y-me* 'eat-3SG/1PL 'he'll eat us'. There are four series of pronouns, distinguishing first, second, and third person; singular and plural number; and in some series, inclusive versus exclusive and dual versus plural first persons.

Some of these structures can be seen in the lines below from a Southern Sierra Miwok story told by Castro Johnson to Sylvia Broadbent (1964: 176-7). Line 1 shows diminutive suffixes on 'bear' and 'deer', nominative case suffixes on 'two' and 'bear', and accusative case on 'two' and 'deer'. The verb 'play' has a transitive pronominal suffix. Line 2 contains two gerundials with accusative case for 'while'. Lines 3 and 5 contain imperatives and line 4 a hortative. Sequences of two past tense suffixes yield a remote past.

ʔoṭi-ʔ ʔyhy·maṭi-t·i-ʔ, ʔaw·iʔ-y-h·y-ko· naʔ·yc, ʔoṭi-· hika·hy-t·i-·.
two-NOM bear-DIM.PL-NOM play-PAST-PAST-3PL be.enough two-ACC deer-DIM.PL-ACC
'Two little bears were playing with two little deer.

ʔitan-ʔok hoje?, ʔaw·i-tho-j ʔi-pu·ṭu-tho-j-ʔok,
then-X next play-GERUNDIAL-ACC that-say-GERUNDIAL-ACC-X
Then, playing that way, the bears said

ʔu·k-e-c·i· miko-ʔ, kacyh-·e-h·y-ko· ʔyhy·maṭi-t·i-ʔ.
enter-PRES.IMP-2PL 2PL-NOM say-PAST-PAST-3PL bear-DIM.PL-NOM
"You go in!"

ʔuk-·e-h·y-ko· hika·hy-t·i-ʔ, mec mec mec kac-·e-·mah·i-·man,
enter-PAST-PAST-3PL deer-DIM.PL-NOM say-PRES.IMP-1PL-HORTATIVE
The little deer went in. "We'd better say 'maa-maa-maa-',

ʔel-·e-·muhmuko· kacyh-·e-h·y-ko·.
let.go-PRESENT.IMPERATIVE-2PL/1PL say-PAST-PAST-3PL
and you let us out", they said.'

UTO-AZTECAN = UTAZTECAN FAMILY

NUMIC = PLATEAU

WESTERN NUMIC

Mono = Monachi = Monache: *Northfork, Wobonuch, Owens Valley . . .*

Northern Paiute = Paviotso: *Bannock, McDermitt, Yerington-Schurz . . .*

CENTRAL NUMIC

Panamint = Koso: *Western, Eastern (Death Valley = Tümpisa, Nevada)*

Shoshone = Shoshoni: *Reese River, Austin, Duckwater, Ely, Battle Mountain, Elko, Ruby Valley, Owyhee of Duck Valley, Gosiute, Skull Valley, Washakie, Fort Hall, Wind River, ...*

Comanche

SOUTHERN NUMIC

Kawaiisu

Ute = Southern Paiute: *Chemehuevi, Southern Paiute (San Juan, Kaibab), Ute*

Tübatulabal = Kern: *Tübatulabal proper = Pahkanapül, Toloim = Bankalachi**

TAKIC = SOUTHERN CALIFORNIA

SERRAN

Kitanemuk*

Serrano*: *Serrano, (Vanyume)*

Tataviam = Alliklik*

Gabrielino = Gabrieleño*: *Fernandeño, Tongva, Gabrielino = Kij*

CUPAN

Cupeño = Agua Caliente

Cahuilla

Luiseño

Juaneño = Ajachmem = Agagchemem = Netela*

Hopi = Pueblo: *First Mesa = Polacca, Mishongnovi = Toreva, Shipaulovi = Sipaulovi, Third Mesa = Oraibi*

TEPIMAN = PIMIC

O'odham = Upper Piman: *Tohono = Papago, Akimel = Pima, Névome*

Pima Bajo = Lower Piman = Mountain Piman

Northern Tepehuan

Southern Tepehuan: *Southern Tepehuan, Tepecano**

TARACAHITIC

TARAHUMARAN

Tarahumara: *Eastern, Western, Southern*

Guarijío: *Upland, Lowland*

OPATAN

Opata*: *Opata, Eudeve = Heve = Dohema*

Cáhita: *Yaqui, Mayo*

Tubar*

CORACHOL

Cora

Huichol

AZTECAN = NAHUATL

Pochutec = Pochutla*

GENERAL AZTEC

Aztec *(Classical, Milpa Alta, Tetelcingo, Zacapoaxtla, Matlapa, Isthmus)*

Pipil

The Uto-Aztecan languages are spoken over a wide area, from Idaho in the north (Shoshoni) to El Salvador in the south (Pipil), and from the California coast in the west (Luiseño) to Oklahoma in the east (Comanche). The languages are assumed to have diverged around 5000 years ago. Subgrouping is a complex issue because of continued contact among dialects and languages. Areally the languages consist of two major groups, Northern Uto-Aztecan, comprised of Numic, Tübatulabal, Takic, and Hopi, spoken from Idaho through southern California, and Southern Uto-Aztecan, comprised of all others and spoken from southern Arizona into Mesoamerica. The groups are separated by a wedge of Yuman speakers.

Buschmann (especially 1859) grouped all of the known branches together except Aztecan, then proposed that their similarities to Aztec were due to contact. On the basis of this work Brinton 1891 combined them all in his Uto-Aztecan group. In 1907 Kroeber established the subgrouping within the Northern four branches, earlier considered a genetic branch termed Shoshonean. Tepiman, Taracahitic, Tubar, and Corachol have sometimes been linked in a subgroup termed Sonoran. Sapir (1913c, 1915c) provided the first systematic demonstration of the genetic relationship of a Northern language to Aztecan, linking Southern Paiute with Nahuatl. The possibility of a deeper relationship between Uto-Aztecan and the Kiowa-Tanoan family was suggested by Harrington (1928), taken up by Sapir (1929), then pursued in Whorf & Trager 1937, Miller 1959, and Davis 1989. Detailed discussion of classification is in Lamb 1964, Miller 1983, 1984, and Cortina-Borja & Valiñas 1989.

Overviews of the Uto-Aztecan family are in Voegelin & Voegelin 1973, Langacker 1977a, Steele 1979, and Miller 1983. Considerable work on reconstruction of the parent language has been done, including Hale 1958-9, Voegelin, Voegelin, & Hale 1962, Bascom 1965, Miller 1967, Crapo 1970a, Hill & Hill 1970, Langacker 1970, 1976a,b, 1977b, Steele 1973, 1975, 1979, Heath 1977b, 1978, 1985, Munro 1977, Fowler 1983, Manaster-Ramer 1984, 1992a,b, and Manaster-Ramer & Blight 1993.

Languages of the Numic branch are spoken throughout the Great Basin and beyond. Language and dialect names do not always match band names, because linguistic and social boundaries often do not coincide. An overview of Numic is in Miller 1986. Reconstructions are in Davis 1966b, Iannucci 1973, Nichols 1974, and Freeze & Iannucci 1979. Of interest in this branch are 'final features', reflected in voiceless vowels and consonant gradations (spirantization, gemination, prenasalization, preaspiration) (Riggs 1949, Canonge 1957, Goss 1970, Miller 1980, Armagost 1985b, 1986, McLaughlin 1992, Yu Cho 1993), instrumental prefixes, and switch-reference.

Western Numic consists of Northern Paiute (Paviotso) and Mono (Monachi). Northern Paiute is spoken fluently by around 500 in nearly 20 communities in Nevada and adjacent Oregon, California, and Idaho (Harold Abel and Kay Fowler p.c. 1994). Published material on Northern Paiute includes notes in Kroeber 1909, Marsden 1923 (with texts), Natches 1923 (on verbs), de Angulo & Freeland 1929, Lowie 1930b (kinship), and Liljeblad 1950 (phonemes), 1971. Grammars are in Nichols 1974, Snapp, Anderson, & Anderson 1982, Poldevaart 1987, and Thornes 1996.

Mono is spoken south of Mono Lake in east central California on both sides of the Sierra Nevada mountains. On the eastern side it is spoken by around 50 people in Owens Valley (the Owens Valley Paiute), and on the western side by about a dozen (the Monache) (Paul Kroskrity p.c. 1993). A grammar of Eastern or Owens Valley Mono, with comparisons to Western Mono and Northern Paiute, is in Norris 1986. Instrumental prefixes are described in Norris 1980. A grammar of Western or Northfork Mono (Monachi) is in Lamb 1958a, and a dictionary in Bethel et al. 1984. Mono dialects are discussed in Lamb 1958b, loanwords in Western Mono are treated in Kroskrity & Reinhardt 1984 and Loether 1997, and verbal art in Loether 1991.

Central Numic consists of the closely related Panamint Shoshone, Shoshone proper, and Comanche. Panamint is spoken in southeastern California and adjacent Nevada by around 20: Western Panamint in Owens Valley near Lone Pine, and Eastern Panamint (Tümpisa) in Death Valley near Furnace Creek and Beatty, Nevada. Grammars are in McLaughlin 1987 and Dayley 1989a, and a dictionary is in Dayley 1989b.

Shoshone is a dialect chain stretching almost 1000 miles from southwestern Nevada westward across northern Utah, southern Idaho, and into western Wyoming (Miller 1970, Miller et al. 1971). Among the dialects are Reese River, Austin, Duckwater, Ely, Battle Mountain, Elko, Ruby Valley, and Owyhee of Duck Valley in Nevada; Gosiute, Skull Valley, and Washakie in Utah; Fort Hall in southern Idaho; and Wind River in southwestern Wyoming. There are over a thousand Shoshone speakers, and in some communities children are still learning the language. Early work is described in Shaul 1981a. A Wind River text with notes and morpheme list is in Shimkin 1949. A set of Gosiute Shoshone texts with grammatical notes and dictionary is in Miller

1972, and grammatical sketches are in Crapo 1976 and Miller 1996b. A grammar of Western Shoshone is in Crum & Dayley 1993. Variation is described in Crapo 1970b and loss in Miller 1971. Poetry songs are in Crum 1980.

Comanche began to develop as a distinct language only at the beginning of the 18th century when Shoshoni bands moved from Wyoming onto the southern Plains with the horse (Miller 1986). Substantial sound changes between 1700 and 1900 have rendered it distinct. An 857-word vocabulary collected by Rejón in the 1860s has been published with commentary by Gelo (1995). At present Comanche is spoken by a handful of people, mostly elderly, around Lawton, Oklahoma. Texts appear in Canonge 1958 and Anderton 1997, a grammar and dictionary based partly on Canonge is in Robinson & Armagost 1990, and another grammar is in Charney 1993. Discussions of voiceless vowels are in Canonge 1957, Hamp 1958a, and Armagost 1985a, 1986, rhythm in Smalley 1953, word formation in Osborn & Smalley 1949, motherese in Casagrande 1948, semantic change in Shaul 1981b, loans in Casagrande 1954-5, Troike 1956, and discourse in Armagost 1979, 1982a,b, 1983, and 1985b.

Southern Numic consists of two closely related languages, Kawaiisu and Ute. Kawaiisu is spoken by under a dozen people in Kern County in central California. There is a comparison of Kawaiisu vocabulary with Mono in Klein 1959, kin terms are in Gifford 1917, botanical terms are in Zigmond 1981, a myth text is in Klein 1988, there are discussions of negation in Munro 1976c and postpositions in Booth 1979. A grammar with dictionary and two texts is in Zigmond, Booth, & Munro 1991.

Ute is a dialect chain stretching from southeastern California to Colorado. The Chemehuevi dialect is spoken by perhaps a dozen people in eastern San Bernardino and Riverside counties in southern California and across the Colorado River into Arizona near Parker. Extensive linguistic material, particularly texts, was collected early in the 20th century by Carobeth Laird, only part of which is published in Laird 1976. A description of Chemehuevi quotatives is in Munro 1978b; and imperatives, passives, and perfectives are discussed in Munro 1979. A grammar with lexicon is in Press 1979. Southern Paiute (not closely related to Northern Paiute) was originally spoken from southeastern California north into Nevada and eastward into Arizona and southern Utah. The Kaibab variety is well described in Sapir's grammar, texts, and dictionary (1910a,b, 1930, 1930-1). Phonological reanalyses of Sapir 1930 appear in Harms 1966, Rogers 1967, and Lovins 1972, and morphologization in Kelly 1978. The San Juan variety is spoken fluently by about 30 on the Navajo reservation. Stress is discussed in Franklin & Bunte 1981, and final features in Miller 1982. Numerals and mathematics in the San Juan variety are described in Bunte & Franklin 1988. A discussion of syntactic issues in Kaibab is in Bunte 1979 and of subordinate clauses and focus in San Juan and Kaibab is in Bunte 1986. A Kaibab text with notes is in Bunte 1980. Ute proper is spoken by about 200 in southwestern Colorado (Talmy

Givón p.c. 1992) and on the Uintah-Uncompahgre Reservation at Forth Duchesne in northeastern Utah. It is described in a grammar in Goss 1966 and in three volumes compiled by the Southern Ute tribe of Ignacio, Colorado and Givón: a dictionary (1979), reference grammar (1980), and traditional narratives (1985).

Tübatulabal, originally spoken along the Kern River near Bakersfield, California, is now known by a handful of elderly speakers (Leanne Hinton p.c. 1994). Kroeber (1907a) distinguished 3 dialects: Palagewan and Pahkanapül (Tübatulabal proper), and Bankalachi (a Yokuts name) or Toloim (the Tübatulabal name). Kroeber relates the name Tübatulabal to their term 'pine nut eaters' (1925a: 607). Around 200 manuscript pages of Tübatulabal vocabulary, 300 of grammatical notes, and 100 of placenames collected by Harrington in 1916 and 1933-4 are on microfilm. Published materials include a grammar by Voegelin (1935b), texts (1935c), dictionary (1958b), kin terms (Gifford 1917), notes (Whorf 1936), a wordlist (Arvidson 1976), discussion of phonology (Swadesh & Voegelin 1939, Manaster-Ramer 1984, 1992b) and reanalyses (McCawley 1969, Lightner 1971, Jensen 1973, Heath 1981) and obsolescence (Voegelin & Voegelin 1977). The scant data from Toloim is in Kroeber 1907a.

The Takic branch consists of a set of more heterogeneous languages spoken in southern California. Reconstruction of Takic pronominal elements is in Langacker 1977c. The two Serran languages, Kitanemuk and Serrano, are closely related. Kitanemuk was spoken around the southern end of the San Joaquin Valley in the Tehachapi Mountains and Antelope Valley. Over 2000 pages of fieldnotes were recorded in 1916-7 by Harrington. In 1937 Zigmond recorded some additional material from Marcelino Rivera, Isabella Gonzales, and Refugia Duran, who may have been the last speakers of the language. A grammar and dictionary based on these materials and some earlier wordlists are in Anderton 1988.

Serrano was originally spoken by a small group east of present Los Angeles around the San Bernadino and Sierra Madre Mountains. Serrano speakers last lived on the Morongo and San Manuel reservations with other Takic speakers. The language is documented in fieldnotes by Harrington from 1918, by Donald Crook from 1974-6, a grammar by K. Hill (1967), a discussion of phonology (K. Hill 1969), and texts (K. Hill 1978, 1980). Hispanisms in Serrano are described in K. Hill 1984. The Vanyume lived to the north along the Mojave River before 1900, but from the only attestation of the language, a brief word list, it is not possible to determine whether it was a dialect of Serrano or a closely related language.

The Gabrielino were a large, powerful group occupying most of present Los Angeles and Orange counties (Bean & Smith 1978). They were nearly destroyed by smallpox and missionization. Harrington (1962) suggested that there were at least four dialects: Gabrielino proper in the Los Angeles basin, Fernandeño to the north in the San Fernando valley, Santa Catalina Island, and San Nicolas Island. Santa

The Hopi language constitutes a fourth branch of Uto-Aztecan. It is spóken in several Pueblos in northeast Arizona by at least 5000 people, including children. There are at least four dialects, First Mesa, Misongnovi, Shipaulovi, and Third Mesa, (termed by Whorf Polacca, Toreva, Sipaulovi, and Oraibi respectively). Some of the differences between them are described in a note to Brew 1979: 514-5. An annotated bibliography on Hopi linguistics is in Seaman 1977. Early work on the Misongnovi dialect was done by Whorf: 1936b,c, 1938, 1946, 1950, 1953, 1956. Semantic and lexical domains are analyzed in Voegelin & Voegelin 1957, 1971, 1973, Titiev 1967, Kennard 1972, Malotki 1979 (space) and 1983a (time). Loans are examined in Dockstader 1955, Kennard 1963, and Hill 1997. Hopi phonology is discussed in Voegelin 1956, Jeanne 1982, and Manaster-Ramer 1984; grammar in Voegelin & Voegelin 1967, 1969, 1975, and Jeanne 1978; discourse structures in Shaul 1987a,b, 1988. A teaching grammar is in Kalectaca 1978 and a dictionary with grammatical notes in Albert & Shaul 1985. A monumental 30,000-entry dictionary with grammatical sketch is in K. Hill, Sequaptewa, & Black 1997. Texts are presented in Malotki & Lomatuway'ma 1984 and Malotki 1978, 1983, 1985, 1993, 1995, and chants in Voegelin & Euler 1957 and Black 1964, 1967.

Among the Southern Uto-Aztecan languages, the Tepiman branch contains four closely related languages: O'odham, Pima Bajo, Northern Tepehuan, and Southern Tepehuan. O'odham (Pima-Papago), is spoken in southern Arizona and adjacent Mexico by the Akimel O'odham ('river people') or Gila River Pima and the Tohono O'odham ('desert people') or Papago. There are 14,000-15,000 speakers, including children (Ofelia Zepeda p.c. 1992). Four main dialects of Akimel are distinguished: Salt River, Eastern Gila River, Western Gila River, and Kohadt (Saxton 1982: 97). The Tohono O'odham recognize several close dialects: Hú·huʔula, ʔa·ngam, Gígimai, Húhuwoș, Koló·di, Ge ʔáji, Kóhadk, Tótoguañ, and Híac ʔeḍ ʔóʔodham (Sand Papago) (Saxton & Saxton 1969: 183-5). The Akimel live on the Gila River, Salt River, and Ak Chin reservations and adjacent Casa Grande, Chandler, Coolidge, and Phoenix area (Fontana 1983: 125). The Tohono live on the Papago (Sells), San Xavier, Ak Chin, and Gila Bend reservations and in Ajo, Marana, Gila Bend, Florence, Tucson, Phoenix, Los Angeles, and San Jose, as well as in Sonora, Mexico. Early work is in Dolores 1913, 1923 and Mason 1950. Modern dictionaries are in Saxton & Saxton 1969 (with grammatical sketch), Mathiot 1973, and Saxton, Saxton, & Enos 1983; texts in Saxton & Saxton 1973 and Bahr 1973; descriptive grammars in Hale 1959 and Saxton 1982, and a teaching grammar in Zepeda 1983. Ethnolinguistic work is in Mathiot 1962, 1967, 1968, Casagrande & Hale 1967, puns in Alvarez 1965, and analysis of devil songs in Kozak 1994. There are also discussions of phonology (Saxton 1963, Alvarez & Hale 1970, Hale 1965, 1970, Hill & Zepeda 1992, Fitzgerald 1997 (on stress)), of morphology and syntax (Hale 1969, Kroch & Marshall 1973, Munro 1984c, Bahr 1986, Zepeda 1984, 1987, Hill & Zepeda 1998), and of discourse structure (Payne 1987). Zepeda writes about O'odham thoughts (1982). A collection of her poetry in English and O'odham is in Zepeda 1995.

The remaining Southern Uto-Aztecan languages are spoken south of the Mexican border. (Some speakers of Yaqui moved into Arizona early in the 20th century, but the original communities remain in Mexico.) Further description of these languages can be found in Campbell 1979, Miller 1983, and Suárez 1983 among others.

Takic structures can be illustrated with material from Kitanemuk, drawn from Anderton's 1988 analysis of Harrington's notes. Anderton distinguishes stops *p, t, c, ǩ, k, kw, ʔ*; fricatives *v, s, š, h*; nasals *m, n, ŋ*; liquids *r, l*; glides *w, y*; and vowels *i, e, a, o, u*, and *ɨ*. The *s* and *l* are rare, as are vowels *e* and *o*. The *č* and *š* are phonetically retroflex. All consonants are voiceless before voiceless segments and finally: *miŋk* 'true', *kiyaŋ* 'whale'. Word-final *h* is rhotacized to *r*: *ni-pih-an* > *nipihan* 'I suckle him', but *ʔa-pih* > *ʔapir* 'he is nursing'. Stress is initial.

Verbs consist of a subject prefix (except imperatives), stem, and perhaps markers of valence (causative, passive) and mode (imperative, desiderative). Subject pronouns distinguish three persons and two numbers: *ni-kwaʔ* 'I eat', *ci-kwaʔ* 'we eat'. Simple stems are translated as present or recent past. A reduplicative prefix on the stem indicates progressive aspect: *namu* 'fight', *pi-nah-namu* 'they are battling'. Verbal suffixes may indicate transitivity, deriving causatives (*ʔa-kim* 'it spilled', *ni-kim-eaʔ* 'I poured it') or indefinite agent passives (*ʔuʔ* 'grab', *ʔuʔ-hea* 'be grabbed'). There is a desiderative suffix *-ihun*: *namu* 'fight', *ni-namu-ihun* 'I want to fight'.

Verb stems may be complex. There is verb-verb compounding (*ni-ya-nim* '1SG-carry-walk' = 'I take') and noun incorporation: *ʔa-ho-kim* '3SG-hole-make' = 'he hole-makes'; *ʔa-mani-muk* '3SG-toloache-sick' = 'he is drunk with toloache'.

Imperative stems are either the same as the indicative or slightly different in form (*kim, kiva* 'come'). Commands contain no subject prefix: *ciʔ* 'pick up', *ciʔ* 'pick it up!'. An enclitic indicates plural addressees: *ciʔ=č* 'Y'all pick it up!' Hortatives contain a special prefix and the plural enclitic: *ca-ciʔ=č* 'Let's pick it up!'

Noun stems may consist of a root (*wahiʔ* 'coyote'), a compound (*pa-hukaht* 'water-deer' = 'elk'), or a root plus derivational suffix (augmentative, characterizer, decessive, nominalizer). Possession is shown by a pronominal prefix with the same shape as the subject prefixes on verbs: *ni-ki* 'my house'. A nominal may further identify the possessor: *ʔa-haviʔ hwi-t* '3SG-blanket rabbit' = 'rabbit's pelt'. Plurality of the noun may be shown by a reduplicative prefix on the stem (*hakat* 'willow sp.', *hahakat* 'willows') and/or the suffix *-am* (*pandriʔ* 'priest', *pahpandriʔyam* 'priests').

An unpossessed noun without a plural or oblique case ending contains what is termed an absolutive suffix: *-t, -c, -č* or zero: *havi-t* 'blanket', *havi-m* 'blankets'; *ki-c* 'house', *ni-ki* 'my house', *ni-ki-vea* 'in my house'. The choice of suffix is a lexical

feature of the noun; most nouns occurring with zero are loans (*rihir* 'beans' < Sp. *frijol*). Nouns are also marked for case: objective, locative, instrumental, comitative, or directional (allative). The object (accusative) case *-(a)y* follows the absolutive suffix: *ʔuvea ni-ʔank yiva-č-ay* 'already 1SG-open door-ABSOLUTIVE-OBJECT' = 'I opened the door.' Objects of imperatives bear no case marking: *ʔanki yiva-č* 'open door-ABSOLUTIVE' = 'Open the door!' The absolutive suffix does not appear with obliques: *ki-c* 'house-ABSOLUTIVE', *ki-vea* 'house-LOCATIVE' = 'in the house'; *kučaraʔ-ni ci-kwaʔ* 'spoon-INSTRUMENTAL 1PL-eat' = 'We eat with a spoon'; *ni-ʔočik ŋatiʔ-meaʔ* '1SG-climb cat-COMITATIVE' = 'I climbed up with a cat'; *ni-mi=mat tyendaʔ-yik* '1SG-go=FUTURE store-ALLATIVE' = 'I will go to the store.'

There are also first and second person independent pronouns and three demonstratives, all of which take the same number and case suffixes as nouns. Used primarily for emphasis, they cooccur with pronominal prefixes: *ni-hak niʔ mimk* '1SG-tell I true' = 'I'm telling the truth', *ni-ʔakaʔ niʔ* '1SG-tobacco.box I' = 'my tobacco box'.

A clitic complex follows the first element of clauses. The complex may include a question marker, past or future tense, a transitive pronoun complex, imperative plural or contrary-to-fact marker, or evidential *nehe*: *mi-wawt-ik=it* '2SG-tired-INTR=Q' = 'Are you tired?'; *mi-yik=mat=ici* '2SG-answer=FUT=2/1.SG' = 'you will answer me'.

Clauses may be conjoined by juxtaposition or a conjunction like *ʔa-* 'and/but'. Complements contain a suffix *-i*: *ni-ʔin ni-huŋuʔ-i* '1SG-know 1SG-speak-C' = 'I know how to speak.' Adverbial clauses are formed with a suffix *-ivaʔ* 'if, when, because': *ni-waw=mat=um mi-yuʔ-ivaʔ* '1SG-hit=FUT=1/2 2SG-cry-if' = 'I'll hit you if you cry.'

Some of these structures can be seen in the lines below from a text dictated by Angela Montes to Harrington and analyzed by Anderton (1988: 253-5).

Niŋan nehe	*nipalaʔtsaj.*	*naw ne*	*nihju*
ni-ŋan=nehe	*ni-palaʔ-c-ay*	*naw=ne*	*ni-hiu*
1SG-look.for=nehe	1SG-shovel-ABS-OBJ	NEG=nehe	1SG-see

'I looked for my shovel. I didn't see it.

apitsivaʔ	*ninaʔn,*		*nitəho,*
ʔa-pic-ivaʔ	*ni-ŋaʔ*	*ni-*	*ni-tiho,*
3SG-arrive-when	1SG-father	1	1SG-tell.news

When my father came, I told him what had happened:

apits	*ip*	*patʃrukat*	*aʔəjuvən*	*nipalaʔtsaj*
ʔa-pic	*ʔip*	*pačukat*	*ʔa-iyiw=vin*	*ni-palaʔ-c-ay*
3SG-arrive	here	man	3SG-steal=3/1	1SG-shovel-ABS-OBJ

a man came here who stole my shovel.'

WAKASHAN FAMILY

KWAKIUTLAN = NORTH WAKASHAN

Haisla = Xaʔislak'ala: *Kitamaat, Kitlope = Xenaksialak'ala*

Oowekyala, Heiltsuk = Bella Bella

Kwak'wala = Kwakiutl = Southern Kwakiutl: *Northern, Southern dialects*

NOOTKAN = SOUTH WAKASHAN

Nootka = Nutka = Aht = West Coast = T'aat'aaqsapa: *Kyuquot, Ehattisaht, Nuchatlaht, Mowachaht, Hesquiat, Ahousaht, Tla.o.qui.aht = Clayoquot, Opetchesaht, Sheshaht = Tseshaht, Ucluelet, Toquaht, Uchucklesaht, Ohiaht*

Nitinaht = Nitinat = Ditidaht = Southern Nootkan

Makah

The Wakashan family is centered around Vancouver Island off the coast of British Columbia. The northernmost language, Haisla (from their *xàʔis(ə)la* '(those) living at the rivermouth, living downriver'), is spoken by several hundred people in their late 30s and up (Emmon Bach p.c. 1992) at Kitamaat. To the south is Oowekyala, spoken by a few Oowekeeno around Rivers Inlet, and Heiltsuk by a few Haihais and Bella Bella around Bella Bella/Klemtu. South of Heiltsuk are the Kwak'wala dialects, spoken by several hundred around Alert Bay, Port Hardy, Fort Rupert, and on northern Vancouver Island. Two dialect clusters are recognized, an Outer one along the coast from Cape Cook to Smith Sound, and an Inner one, within the Queen Charlotte and Johnstone Straits. Along the west coast of Vancouver Island, from Quatsino Sound to Barkley Sound, is a chain of Nootka dialects with several hundred speakers, some in their 30s. To the south is Nitinaht with about 30 speakers. Across the Strait of Juan de Fuca, on the northwest tip of the Olympic Peninsula in Washington State, is Makah (from the Salish *maq̓a·* 'well-fed'), with perhaps a dozen speakers, the youngest around 60.

The Northern and Southern branches of the family are quite distantly related, but languages within each branch are close. Nitinaht and Makah have generally been considered closer to each other than either is to Nootka, with an estimated separation of 1000 years, although Embleton 1985 found greater similarity between Nootka and Nitinaht, which are adjacent. Boas first noted the relationship between Kwakiutlan and Nootkan in a letter in 1889. Sapir worked out supporting phonological, morphological, and lexical correspondences (1911c). The possibility of a deeper genetic relationship among the Wakashan and neighboring Salishan and Chemakuan families has been considered (Frachtenberg 1920, Sapir 1929a, Swadesh 1949, 1953a,b,c, Andrade 1953a,b). Such a unit, termed *Mosan*, now seems unlikely, with similarities attributable to contact (section 6.3). Jacobsen 1979b provides an excellent discussion of comparative Wakashan work.

References to eighteenth- and nineteenth-century documentation of Wakashan can be found in Pilling 1894. Adler 1961, Thompson 1973, and Thompson & Kinkade 1990 contain good overviews of the family and recent work.

For the North Wakashan languages, there is a large comparative root list with items from all of the languages (Lincoln & Rath 1980) in 2648 entries. For Haisla there are discussions of phonology (Bach & Bates 1971, Bach 1990, Vink 1977, Lincoln & Rath 1986), a dictionary (Lincoln & Rath 1986), and a text (Lincoln, Rath, & Windsor 1990). For Oowekyala there are texts (Boas 1928b, Windsor 1982) and for Heiltsuk a dictionary with grammatical sketch (Rath 1981). For Kwak'wala there are lexical notes (Boas 1916, 1924a, 1940, 1932, Boas & Goddard 1924a), grammatical sketches (Boas 1900, 1911c, 1947), a dictionary (Grubb 1977), and texts (Sapir 1906, Boas 1910, 1935, Boas & Hunt 1902-5, 1906, Levine 1977b), and studies of dialectology (Wilson 1990) and syntax (Anderson 1984, Levine 1982, 1984).

General works on South Wakashan include a discussion of variable vowel length (Klokeid 1990) and reconstructions of Nootka-Nitinaht numerals (Hess 1990b), pronominal suffixes (Haas 1969d) and stems (Haas 1972). Work on Nootka phonology deals with pharyngeals (Jacobsen 1969), and lenition and glottalization (Sapir 1938, Rose 1976). Sapir 1916a describes phonetics. The special phonology and morphology of speech to or about babies, monsters, foreigners, deformed individuals, and outcasts is described in Sapir 1915e. Baby talk (motherese) is further discussed in Sapir 1929 and Kess & Kess 1986. Jacobsen (1997) discusses vocative vocalism. Sapir 1924 contains a Nootka text, Sapir & Swadesh 1939 texts with grammatical notes and lexical lists, 1955 more texts, and Swadesh 1939 and 1948a discussions of morphology. Rose 1981 provides an excellent, detailed grammar, and Nakayama 1997 a substantial analysis of relations between grammar and discourse. Roberts & Swadesh 1955 is a collection of songs. Jacobsen 1992 describes clause combining. Powell 1991 is a dictionary. On Nitinaht there are two texts (Swadesh & Swadesh 1932, Touchie 1977), and studies of enclitics (Klokeid 1976, 1978), syntactic relations (Klokeid 1977), and the inferential (Carlson & Thomas 1979). Available work on Makah includes discussion of grammar in Jacobsen 1979a, neologisms in Jacobsen 1980b, plant and animal terms in Gill 1983, Gill & Renker 1985, Renker & Gill 1985, word order in Renker 1987, and lessons in Jacobsen 1979c. Jacobsen 1986a describes Makah evidential suffixes, such as *-pi·t* 'inference from physical evidence' (*wiki·ċaχak-pi·d* 'it looks like bad weather'), *-q̓adi* 'from hearing, feeling', *-ck^{w}i·* 'from remains, debris', *-k̓uk* 'from appearance', *-p̓aɬ* 'from smelling, tasting', *-caqiƛ* 'uncertain visual evidence', *-wa·t* 'quotative', *-χa·- ..-š* inferential, *-χuc̓aʔa·- ..-š* past inferential, *-ʷa·- ..-šk̓ub* belated realization. Further work can be found in preprints for the International Conference on Salish and other Northwest Languages (*ICSNL*).

The Wakashan languages are known for their large consonant inventories. There

are bilabial, alveolar, lateral, palatal, velar, labio-velar, uvular, and labio-uvular stops (*p, t, ƛ, c, č, k, k^{w}, q,* and q^{w}) in plain, ejective, and, in the northern languages, aspirated series. Velars in the Northern languages are palatalized (*k^{y}*). Most stops are matched by fricatives: *ɬ, s, š, x, x^{w}, χ, χ^{w}*. A discussion of glottalized continuants is in Sapir 1938. All languages contain laryngeals *ʔ* and *h*. Nootka and Nitinaht have developed pharyngeals from uvulars and labio-uvulars (Jacobsen 1969). Resonants *m, n, y,* and *w* (and in some languages *l*) occur both plain and glottalized. The nasals have become voiced stops *(b, d)* in Nitinaht and Makah. Heiltsuk has developed distinctive tone: *k̓^{w}ás* 'mussel', *k̓^{w}as* 'to sit outside' (Kortlandt 1975, Rath 1985, Wilson 1987). Wilson 1986 discusses metrical structure. Suffixes can significantly affect the shape of stems. Bach 1990 gives Haisla examples of these 'end effects' on the root *bek^{w}-* 'human', including softening (voicing) of the final root consonant, hardening (glottalization), reduplication, and internal changes: *bek^{w}elu'semi* 'character, way of acting', *beg^{w}a'nem* 'person', *bek^{w}ʼe's* 'sasquatch, monkey, man of the woods', *bi'beg^{w}anem* 'people', *baa'k^{w}ual a* 'talk together'.

The Wakashan languages are highly polysynthetic. There is reduplication, some infixation, and extensive suffixation. Two types of suffixes are distinguished, an inner layer of formative suffixes (also called lexical or derivational) and an outer layer of incremental suffixes (also called grammatical or inflectional). The formative suffixes number in the hundreds and often correspond semantically to roots, words or even phrases in other languages. Distinctions of shape and location are pervasive in the languages (Berman 1990). Of special interest is the nature of lexical categories, discussed at length in Jacobsen 1979a. All roots may function as either predicates or adjuncts, although some are semantically more verbal, others nominal. Predicates typically carry clause-level inflection, particularly aspect.

Oblique nominals are marked in the Northern languages with enclitics attached to the constituent preceding the nominal. Rath gives a Heiltsuk example (1981: 85).

Dáduqvlá wísmáχi ẇáċiáχi=his dúcváyúaχi=la uxvthiásaχi=gen híṁásaχi.
watch man dog=with binoculars=on roof=for chief
'A man watched a dog with binoculars on the roof for the chief.'

Structures typical of the Wakashan languages will be illustrated here with examples from Kyuquot Nootka. Material is drawn from Rose 1976 and 1981.

Kyuquot contains plain and ejective stops: *p, t, ƛ, c, č, k, k^{w}, q, q^{w}; p̓, t̓, ƛ̓, c̓, č̓, k̓, k̓^{w};* fricatives *ɬ, s, š, x, x^{w};* pharyngeals *ʕ, ḥ;* laryngeals *ʔ, h;* resonants *m, n, y, w,* and *m̓, n̓, y̓, w̓*. Uvular and labio-uvular ejectives and fricatives (*q̓, q̓^{w}, χ, χ^{w}*) are now marginal. The three vowels *i, a, u,* occur short, long, and with variable length that depends on the preceding or following morpheme. Morpheme-final lenition and

glottalization are triggered by the following suffix. The suffix *-iɬ* 'in the house', for example, can condition lenition: *hiɬ-* 'there', *hiy̓-iɬ* 'there-in.the.house'. A suffix 'on the rocks' triggers glottalization: *hupt-* 'to hide', *hupṭ̓a·ʔa* 'to hide on the rocks'.

Two morphological classes are distinguished: particles, which are uninflectable, and stems, which may be inflected. Stems form the basis of predicates and adjuncts. Stems may undergo reduplication, which indicate such distinctions as aspect or distribution over time or space: *mu·tq-* 'lop off', *mu-mu·tq* 'lop off here and there'.

There is extensive suffixation. Rose counts around 400 lexical or derivational suffixes, and around 50 grammatical or inflectional suffixes. The lexical suffixes convey a wide variety of meanings. Some are similar to those of verb roots in other languages, such as 'buy', 'sell', 'find', 'defend', 'deprive of', 'cry for'. Some resemble adjectives, such as 'destined for', 'aware of', 'fit for', 'baited with'. Some resemble nouns, such as 'animal hide', 'female inhabitant of', 'kin', 'berry'. Others resemble the derivational affixes of other languages, functioning as causatives, desideratives, progressives, and agentive, patientive, or instrumental nominalizers. Many are locatives, such as 'toward', 'in', 'at side of head', 'at head, bow of vessel', 'in mouth, closed container', 'at face, along wall', 'at water level', 'just offshore', and others. Some important suffixes distinguish aspect: momentaneous, continuative, durative, completive, inceptive, iterative, habitual, and graduative (gradualness). Some of the lexical suffixes resemble those of neighboring Salish languages in meaning, such as those invoking body parts, but as a group they serve a much wider range of functions.

Inflectional suffixes appear in the following order: plural, diminutive, mode, tense, passive, possessive, mood, pronoun, mood, tense, and iterative. Most appear in both predicates and adjuncts. Plural is usually collective: *qaḥ-sa·p-'at-ṁinḥ* 'die-MOMENTANEOUS.CAUSATIVE-PASSIVE-PL' = *qaḥsa·ptṁinḥ* 'a bunch of them were killed'. The diminutive appears with predicates as well as adjuncts: *t'iqʷ-ʕiɬ-ʔis* 'sit-in.house-DIMINUTIVE' = *t'iqʷiɬis* 'a midget was sitting in the house'. Modes carry such meanings as urgency, irrealis, 'must', and 'probably': *ƛ'i-ši(-ƛ)-matak-ʔa·qƛ* 'shoot-MOMENTANEOUS-PROBABLY-FUTURE' = *ƛ'ičiƛmatkʔa·qƛ* 'I'm pretty sure she'll shoot'. Tense is commonly unspecified, but may appear: *ƛ'iḥci·p-sa·ca-int-ʔi·* 'flower-container-PAST-DEFINITE' = *ƛiḥci·pscinti* 'the (smashed-up) vase'. The possessive, also optional, can indicate not only legally or socially recognized ownership, but also social relationship, physical adjacency, or association: *ʕini·ƛ-uk-q-s* 'dog-POSSESSIVE-SUB-I' = *ʕini·ƛkʷqs* 'my dog', *qu·ʔas ɬaš-'as-uk* 'adult trail-outside-POSSESSIVE' = *qu·ʔas ɬaɬask*ʷ 'a trail for humans'. Among the moods distinguished are relative, possessive, subordinate, relative, dubitative, purposive, interrogative, conditional, indefinite, absolutive, indicative, and imperative. Subject pronouns distinguish three persons and two numbers. The iterative indicates repetition or addition: *qʷi-'i·c-ʔa:qƛ-(y)i:-k-ƛa·* 'what-eat-FUTURE-INDEFINITE-2-ITERATIVE' = *qʷiʔi·cʔa·qƛi·kƛa* 'I wonder what else you'll eat'.

A simple clause contains minimally a predicate as its nucleus, inflected for clause-level distinctions. It may be accompanied by one or more nominal adjuncts, although multiple full adjuncts are rare in natural speech. Basic constituent order is predicate-initial, but a core nominal may precede for focus. Obliques, which never appear initially, are analyzable as subordinate clauses based on predicates with pronominal roots: *ƛ̓ši(ƛ)-ʔa:qƛ ʔu-hẇaɬ χuta·y* 'cut-MOMENTANEOUS-FUTURE it-use knife' = *ƛ̓čiƛa·qƛ ʔuḥẇaɬ χuta·y* 'He'll cut it with a knife.'

Passive constructions and their discourse functions are described in Rose & Carlson 1984, Whistler 1985, and Emanatian 1988. Some passives have no active counterparts, like *ṁiƛ-yu·-'at* 'rain-ed-PASSIVE' = 'get rained on'. Yes/no questions are signalled by a mood suffix on the verb, but content questions contain a sentence-initial question stem: *ʔaqi-n-'ap-na-k* 'what?-do-CAUSATIVE-PAST-2-Q' = *ʔa·qinʔapnak* 'What did you do?' Relative clauses are inflected for relative mood: *wa·sa-ḥa· mawič-ʔi· yaqʷ-su:p-na-q-in* 'where-? deer-DEFINITE which-kill-PAST-RELATIVE-1PL' = *wa·saḥ mawiči yaqsu·pnaqin* 'Where's the deer which we killed?' They can serve as matrix clauses alone: *qʷi-k̓up-ʔi·tq* 'what-want-RELATIVE' = *qʷik̓upitq* 'That's what he wanted.'

The Tseshaht Nootka passage below is from a Nitinaht story, 'The Rival Whalers', told by Tom Sa·ya·ɬcapɬs ('Stands up high on the beach') to Sapir in 1913 (1924). (Transcription has been regularized to correspond to the Rose material.)

ʔó·-simc̓-aƛ	*má·ʔak*	*í·ḥ-to·p*	*k̓ʷálsic.*
a.certain-ritually.train.secretly.for-now	Calif.whale	big-NM	(name)
now trained secretly for success in so & so	Calif whale	humpback	K'walisits

'K'walisits was training in secret for success in hunting California whales and

wiʔič-ú-ʔaƛ	*hawí·-ʔaƛ*	*ʔó·-simč.*
sleep-MOMENTANEOUS-NOW	cease.MOM-now	a.certain-ritually.train.secretly.for
now went to sleep	now finished	train secretly for success in such

humpbacked whales. And he went to sleep, having finished his ritual training.

c̓úk-pi-ʔaƛ	*ʔínk-ʔi.*
lie.on.one's.back-in.the.house.MOMENTANEOUS-NOW	burn.DURATIVE.INTR-NOMINALIZER
now lay down in the house on (his) back	the fire

He lay down on his back near the fire,

wík-ʔaƛ-uk	*c̓úk-piƛ*	*ɬó·c·-ma*	*ɬ̓úqʷ-iɬ-ʔaƛ.*
be.not.DUR.INTR-now-own	lie.on.back-in.house	woman-ABS	sit-in.house.DUR-now
now of (him) was not	lie down in the house	woman	now sat in the house

but his wife did not lie down on her back but sat up.'

Wappo = Ashochimi: *Clear Lake, (North)western (=Russian River), Northern, Central, Southern*

The Wappo language is indigenous to Sonoma and Napa counties in California, about 50 miles north of San Francisco and 40 miles inland. The five dialects noted by Barrett (1908), apparently very similar, were concentrated in two areas, one at the south end of Clear Lake, the others between Geyserville and Napa. The name *Wappo* is said to come from the Spanish *guapo* 'brave'. The language has traditionally been classified with Yuki (Powers 1877, Powell 1891, Kroeber 1925a, Elmendorf 1968). Sawyer, who worked extensively with the language, maintained that Yuki-Wappo resemblances are more likely the result of extensive borrowing (1980), but Elmendorf collected considerable evidence supporting a genetic relationship (1981). Four elders retain some knowledge of the language (George Somersal p.c. 1993).

Major published sources include a brief sketch (Kroeber 1911), a text collection (Radin 1924), grammars (Radin 1929, Sawyer 1991a), an English-Wappo vocabulary with affix list (Sawyer 1965), and a text (Sawyer and Somersal 1977). There are articles on Spanish loans (Sawyer 1964), color terms (Sawyer 1991b), names (Sawyer 1976), the copula (Li & Thompson 1977a), causatives (Li & Thompson 1977b), case (Li & Thompson 1976, Li, Thompson, & Sawyer 1977), and relativization (Li & Thompson 1978). Early material is not always reliable phonetically. Examples cited here are drawn from Sawyer 1965 and 1991a unless otherwise noted.

Phonologically Wappo is similar to other languages in the area. Sawyer distinguishes bilabial, dental, alveolar, alveolar affricate, palatal, and velar obstruents in three series: plain, aspirated, and ejective (*p, t, ṭ, c, č, k; ph, th, ṭh, ch, čh, kh; p', t', ṭ', c', č', k'*). Resonants also appear both plain and glottalized: *m, n, l, w, y; m', n', l', w', y'*). There are laryngeals *ʔ* and *h*, and sibilants *s* and *š*. There is a basic five-vowel system with distinctive length: *i, e, a, o, u; i·, e·, a·, o·, u·*. There are traces of vowel harmony: *ʔéyḳa* 'child, *ʔóḳo·to* 'children'. Primary stress is on roots.

Noun stems may be simple (*hél* 'fire') or compound, consisting of NOUN+NOUN (*chìca·-meḳ* 'bear-woman') or NOUN+ADJECTIVE (*ʔo(n)-nùče·-* 'people-small' = 'children'). Nominal prefixes specify inalienable possessors: *ʔi·-mé?* 'my hand', *mi·-ʔéwi?* 'your husband'. A plural suffix may appear with nouns referring to humans or non-humans, more commonly with the first. Enclitics mark dative, benefactive, instrumental, comitative, genitive, vocative, and locative cases. The core cases are basically unmarked, but an enclitic *=i*, which appears with full noun phrases introducing or reintroducing topics, appears with most lexical subjects in the data.

There is a full set of free pronouns, but they do not appear when reference is clear. First and second person pronouns distinguish singular and plural number and nominative and accusative case. Demonstratives distinguishing three degrees of distance are used for third persons. Animate and inanimate arguments are distinguished, and among animates, singular and plural number. Oblique pronouns are composed of the accusative forms plus case enclitics. A free reflexive pronoun does not change form for person, number, or case. An interesting feature of the system is a set of logophoric or empathetic pronouns similar in function to those of the neighboring Pomoan languages. These refer to third persons coreferential with main clause subjects: *cephi me eyk'apih helta?* '3SG LOGOPHORIC daughter helped' = 'She helped her (own) daughter.' They also appear in complex sentences: *cekoti mesa opaʔta šuʔuh hinweyakhiʔ* '3PL LOGOPHORIC.PL ate after slept' = 'When they had finished eating, they slept' (Thompson & Li 1993).

Adjectives may precede nouns, functioning attributively, or follow a copula, functioning predicatively. They may be marked for number with the same plural suffix as nouns, but they do not necessarily agree overtly with their heads. Often inanimate nouns are unmarked for number while associated adjectives, describing individual qualities, are marked. Adjectives may themselves function as nominals, and in that capacity they are associated with case enclitics.

Some verbs contain specification of number or shape as part of their meaning: *čhóseʔ* '(1) sick', *wéyʼšeʔ* '(group) sick'. Verbal prefixes specify direct objects, directions, and means. Object prefixes appear first: *céphi ʔi·-ma-páʔ-e·siʔ* '3 me-up-eat-FUTURE' = 'She will eat me up.' Directional prefixes contribute such meanings as 'hither', 'thither', 'together', 'up', 'down', 'in', 'out', 'on', 'off', 'behind': *te-čóʔ* 'hither-go' = 'Come here!' *pah-múčʼkhiʔ*, 'together-closed (of eyes)'. Instrumental prefixes indicate means: *pih-wóyi·suʔ* 'rub with the foot', *meh-wóyi·suʔ* 'rub with the hand'. Among the verbal suffixes are an inchoative, causative, purposive, distributive, negative, factual, punctual, past, present/durative, future, infinitive, and imperative.

Clauses may be combined in a number of ways. A clause may serve as a core or oblique argument of a larger sentence, alone or with a resumptive pronoun. As such, it may be followed by a case enclitic.

cèw there *čóʔo-khiʔ* go-FACTUAL *[ʔòn* [people *làl-ekh-taʔ* die-FACTUAL-PAST *nòma=h],* live=LOC] *me·-náʔa* LOG-mother *náw-taʔ.* see-PAST

'He went over there [where the dead people live] and saw his mother.'

Complex sentences may be built with verbs containing a purposive or infinitive suffix: *ɬol-ema* 'kill-PURPOSIVE' = 'in order to kill', *olol-ukh haḳšeʔ* 'dance-INFINITIVE like' = 'like to dance' (Thompson p.c. 1990).

Dependent clauses may be formed by nominalization with possessive prefixes, combined with particles such as *celʼ* 'then', or simply juxtaposed.

ʔi·-hol-wéh-ikh, *cèw* *ʔàh* *hè* *te-k'ól-ikh* *náw-taʔ.*
my-wood-go.for.wood-FACTUAL there I this down-wash-FACTUAL find-PAST
'Having gone out for wood, I found this (clover) washed down there.'

wèyh *ʔísa-ʔ,* *ʔìs=i* *čó-·-i·siʔ,* *ʔi·sa·-nàʔa* *mu·-lék'-i·siʔ.*
ready let's.go-IMP we=SUBJECT go-FUTURE our-mother toward-visit-FUTURE
'Ready, let's go over there to see our mother!'

Many of these features can be seen in the passage below from Sawyer & Somersal (1977: 106). The text was reconstructed from one collected by Radin in 1917.

lòkh-noma=h *nóm-khiʔ,* *khón',*
goose-camp=LOCATIVE live-FACTUAL once
'Long ago at Goose Camp

chíca·-met'=a·yi, *me-ʔèw* *k'éšu·-has=k'a.*
bear-woman=SUBJECT POSSESSIVE-husband deer-old=with
Bear Woman lived with her husband Deer.

mèl *yékh-ah-khiʔ,* *teme·-ʔéw=i.*
acorn go.for-PUNCTUAL-FACTUAL POSESSIVE-husband=SUBJECT
Her husband used to go for acorns.

hol-càw=uh *meh-yáʔ-el-khiʔ,* *mèl* *chék'-miʔ.*
tree-top=LOCATIVE up-climb-DISTRIBUTIVE-FACTUAL acorn knock.off.tree-PRESENT
He would climb to the top of a tree and knock acorns off.

chìca·-met'=a·yi *mèl* *páʔ-miʔ.*
bear-woman=SUBJECT acorn eat-PRESENT
Bear Woman always eats some of the acorns.

cèl' *k'éšu·-has=i,* *"thàl* *ʔìs=i* *ma·més-a·siʔ,"* *háh-taʔ.*
then deer=SUBJECT what we=SUBJECT in/on-bring.back-FUTURE say-PAST
And Deer said, "What are we going to take home?"

cèl *chíca·-met'=a·yi* *"ʔi·-cáh-ši* *miʔ,* *ʔi·-k'éyi·-ši?"* *háh-taʔ.*
then bear-woman=SUBJECT me-say-PRESENT you me-scold-PRESENT say-PAST
Then Bear said, "Why do you say that to me? Why are you always scolding me?"

Washo = Washoe

The Washo language is spoken in east central California and Nevada in an area centering around Lake Tahoe. There are several dozen speakers, most over 50 years of age (William Jacobsen p.c. 1991). The name *Washo* is from the native word for the tribe, *wá·šiw*. The language, which has no close relatives, was recognized as an isolate in Powell 1891. In 1917 Harrington linked it to Chumash, which Sapir (1917) noted would make it Hokan. Dixon & Kroeber 1919 contains two lists of cognates shared by Washo and other Hokan languages, one compiled by them, one by Sapir. Jacobsen has provided large sets of additional possible cognates (1958, 1979: 567-70).

The first two Washo words were written down in 1844 by John Frémont. Subsequent material, primarily wordlists, was recorded by Jules Remy in 1855, R. Ridgeway in 1875, James Simpson by 1876, Stephen Powers in 1876, Henry Henshaw in 1883, Charles Keeler in 1889, C. Amy Cohn by 1902, C. Hart Merriam in 1903, 1904, 1935, Edward Curtis by 1926, and John Price by 1962. Major published sources include a grammatical sketch in Kroeber 1907c, text collections in Dangberg 1927 and Lowie 1963, especially a comprehensive grammar in Jacobsen 1964, and a pedagogical grammar in Jacobsen 1996. Jacobsen describes dialectal differentiation and external relations (1978) and headless relatives (1998). Bibliographies can be found in d'Azevedo & Price 1963 and Jacobsen 1978, 1986b,c, and 1996b. Material cited here comes from Jacobsen, more reliable than earlier sources.

The Washo consonant inventory consists of voiced, plain, and ejective obstruents: *b, d, ʒ g; p, t, k, ʔ; ṕ, t́, ć, ḱ*; fricatives *s, š, h*; and voiced and voiceless resonants *m, n, ŋ, w, l, y; M, N, W, L,* and *Y*. Internal reconstruction indicates that the voiced and voiceless stops developed from a single series after the loss of a consonant, perhaps **h*. Vowels are *i, i̱, u, e, o,* and *a*. Vowel length is distinctive but occurs only in stressed syllables: *gusú·i̱ʔ* 'woodpecker species', *masái̱i̱* 'flint arrowhead'. Stress occurs on the penults of stems and on some suffixes.

There is pretonic regressive vowel harmony, in which vowels *a* and *o* condition *a*, while vowels *e, i, i̱*, and *u* condition *e*. The harmony can be seen, for example, in alternations in the shape of the possessive prefix: *dahánŋa* 'his mouth' (*-hánŋa* 'mouth'), *datóʔo* 'his throat'; *dek'étep* 'his bottle', *dep'ísew* 'his ear', *deb'i̱k'i̱* 'his grandmother's sister', *degúʔu* 'his mother's mother'. Dialect differences are minimal in Washo, but one involves the conditioning vowel. In the southernmost dialect, the harmonizing vowel is affected by any vowel in an immediately following tonic or pretonic syllable; in other dialects, only tonic vowels trigger harmony: S. *gešuʔmáwit* vs N. *gašuʔmáwit* 'throw it over!'; S. *gep'idá·šuk* vs N. *gap'idá·šuk* 'come in (plural)'. Northern dialects show more harmony in borrowed words than the southern dialect.

Jacobsen distinguishes several types of noun stems. Unrestricted nouns may be

used without inflectional prefixes. Restricted nouns, mostly referring to body parts, some plant parts, common artifacts, and affinal kinsmen, appear with either a possessor prefix or the noun prefix *d-*. Possessed nouns, mostly consanguineal kin terms, always appear with a possessor prefix. Attributive-possessed nouns, reciprocal kin terms for descending generations, appear with possessor pronouns in the objective case. Possessor prefixes distinguish first, second, and several third persons: 'one's own', 'another's', 'another's (overtly identified)', and impersonals: *g-áŋal* 'his own house', *ɬ-áŋal* 'another's house', *mé·hu ʔáŋal* 'boy his-house' = 'the boy's house', *bedüliʔ M-áŋal* 'match it's house' = 'matchbox'. Suffixes distinguish inclusive and exclusive dual and plural: *l-áŋal-ši* '1-house-INCLUSIVE.DUAL' = 'our (your and my) house'. Other suffixes contribute meanings such as diminutive (*deʔg-á·ċi* 'stone-DIM' = 'gravel'), defunctive (*diʔélel-uŋil* 'my late mother's father'), 'discarded' (*émlu-yóyʔ* 'food-discarded' = 'garbage'), and resultative (*ɬá·gim-éweʔ* 'pine.nut-RESULTATIVE' = 'gathered pine nuts'). Nouns may be reduplicated for plurality: *waší·šiw* 'Washoes'.

Low numerals and quantifiers serve a kind of classificatory function (Jacobsen 1979e). Forms from the first set, such as *lákaʔ* 'one' or *míʔleʔ* 'all' are applied to all non-humans and, on occasion, humans as well. Jacobsen finds the form *lákaʔ* used for a pipe, a duck, and even a woman. Forms from the second set, such as *lékiliŋ* 'one' or *míʔlew* 'all', are used only for persons or personified animal protagonists in stories. Forms from the third set, such as *lákaŋ* 'one' or *míʔleŋ* 'all', are used for both humans and non-humans to mean 'exactly'.

Six types of verb stems are distinguished: intransitive, transitive, double transitive, dependent, neutral, and auxiliary. The first three may be inflected directly with pronominal prefixes similar to those marking possessors on nouns (Jacobsen 1977): *ɬ-émluyi* 'I'm eating', *mi-ɬ-í·gigabigi* 'I'll see you', *mi-ɬ-éšilhi* 'I might give you this'.

Dependent verb stems are combined with instrumental prefixes before inflection. Washo has an unusually rich set of instrumental prefixes, some of which are themselves derived (Jacobsen 1980c). The meanings they contribute would be expressed by verb roots in many other languages: *mal-áhad* 'jumping-across' = 'to jump across'. They may pertain to motion, position, or appearance: 'by swimming', 'falling', 'flying/sliding/jumping (of fish)', 'four-legged animals going in a group', 'involving buttocks', 'throwing', 'wind blowing', 'liquid flowing/soldiers marching'; to color, shape, or size: 'blue', 'flat', 'thick'; to manners: 'by cutting', 'by hitting'.

Neutral stems must be combined with a prefix specifying transitivity (*m-* intransitive or *y-* transitive) before inflection: *mášuyi* 'she's washing', *gayášuyi* 'she's washing it'. There is no passive (Jacobsen 1979d). Auxiliaries follow main verbs, with meanings like 'to pretend', 'to finish', 'to begin', 'to start out': *émlu-ŋáŋa* 'to pretend to eat'.

Partial reduplication of verb stems is common. Its function is to indicate plurality of action. It may indicate the repeated action of a single actor or the simultaneous

action of several working independently, and it may imply multiple patients: *ášdim* 'to hide (TRANSITIVE)', *gašášdimi* 'he's hiding things in different places'.

Various prefixes and suffixes appear with inflected verb stems. Among the prefixes are a collective dual (*bu-péyċu* 'to sunbathe together'), a marker indicating a diffuse or indefinite absolutive (*wa-máhm* 'to be cloudy'), a detransitivizer, and reflexive/reciprocal. Among the suffixes are directionals 'hither', 'hence', 'away to', 'going and returning', and 'returning'. Suffixes also distinguish a large number of tenses: recent past, intermediate past, pluperfect, remembered past, distant past, near future, intermediate future, and distant future. There are usitative and traditional aspect markers, and various markers of mood and modality: negative, interrogative, evidentials (visual, auditive, inferential with surprise), and subjunctive (supposition or possibility in the future or contrary to fact in the past). Four final suffixes form finite verbs: a redundant, indicating that the hearer already knows the information, an optative indicating intent or expectation, an aorist (perfective) and an imperfective.

Constituent order is strictly SOV. Clauses are combined in several ways. Enclitics meaning 'but', 'also', and 'just', which appear with various lexical classes, can serve this function: *láŋal=ŋa* 'but my house . . .', *lé·=ŋa* 'but as for me . . .', *ʔíyeweʔi=ŋa* 'he went away but ...'. If there is a change of subject from one clause to the next, the switch-reference marker *-š* follows either the finite verb or a sentence connective: *šá·su diLáʔyaš gépam* 'I'll drive away the birds, and then you come!'

Headless relative clauses are common (Jacobsen 1998). They contain no relative pronouns and show no distinctive word order. They are formed by the suffixation of markers containing several parts. The relativizers begin with the imperfective *-i*. If the relative clause differs from the matrix in subject, the switch-reference marker *-š* follows. Next come suffixes descended from third person subject and object pronouns *gí·* and *gé·*.

[daʔmóʔmoʔ	*da*	*ʔ-éʔ-i-gi]*	*ṕímewaʔaš.*
woman	there	3-was-IMPERFECTIVE-3SUBJECT	went out

'A woman who was there went outside.'

[ḱá·ḱaʔ	*dá·*	*gé·gel-i-š-ge]*	*yá·maʔ.*
heron	there	was sitting-IMPERFECTIVE-SWITCH-3OBJECT	she spoke to

'She spoke to a heron who was sitting there.'

Adverbial clauses meaning 'where S' or 'and S' are formed with a similar construction evolving historically from the imperfective suffix *-i*, the switch-subject suffix *-š*, and an adverb *dá·* 'there': *ʔíṕam-ida* 'he arrived there and . . .' (with coreferent subject), *láŋaliʔ-išda* 'where I live' (with different subject).

WINTUAN = WINTUN = WINTOON = COPEH = COPEHAN FAMILY

NORTHERN WINTUAN

Wintu: *Wintu proper (Upper Sacramento, McCloud, Stillwater, Keswick, French Gulch), Upper Trinity-Numsoos, Hayfork-Norrelmuk, Bald Hills*

Nomlaki = Noamlakee = Central Wintu: *Hill Nomlaki (Elder Creek, Paskenta, Grindstone), River Nomlaki (Red Bluff, Tehama), River Wailaki = Noema*

SOUTHERN WINTUN

Patwin = Patween: *Hill Patwin (Lodoga = Kabalmem, Tebti = Lake County, Southern Hill Patwin (Cortina and Napa, Rumsey = Cache Creek, Putah)), River Patwin (Colusa, Grimes)*

Southern Patwin*: *Knight's Landing, Dixon, Suisun*

The Wintuan languages were spoken in the Sacramento Valley of central northern California. The northernmost language, Wintu (from their *wi-nt^{h}u* 'person-animate' = 'person, people, Indian'), was spoken in Shasta, Trinity, and parts of Siskiyou counties. Schlichter 1979 notes that the nature of dialect differentiation within Wintu is unclear. Divisions have often been geographical or political rather than linguistic. She concludes that there were probably no clear dialect boundaries but rather a continuum of idiolects. The subgrouping above is from Whistler 1980. Perhaps two Wintu speakers remain (Shepherd 1989, Grant 1997). To the south of Wintu was Nomlaki (based on their *nom-* 'west'), of which few if any speakers remain. South of the Nomlaki, extending to San Francisco Bay, were the Patwin (from their *patwin* 'person'). At least one speaker remembered Hill Patwin in 1997, but Southern Patwin disappeared early with scant documentation, so its genetic status remains unclear. Pitkin compares the time depth of the family to that of Romance, noting that many similarities between Northern Wintu and Patwin are due to contact. The family was recognized by Latham in 1856 and grouped with Maiduan, Yokutsan, Miwok, and Costanoan into a (core) Penutian stock by Dixon and Kroeber in 1913.

Wintu proper is the best documented of the languages. Major published sources include a grammar (Pitkin 1984), two dictionaries (Schlichter 1981b, Pitkin 1985), and two rich text collections (Shepherd 1989, 1997). Additional texts are in the Pitkin grammar, in Pitkin 1977, 1978 and Schlichter 1978 and 1980. A discussion of evidentiality is in Schlichter 1980 and a description of Wintu shamanistic jargon, with a text, is in Schlichter 1981a. A Nomlaki wordlist is included in the ethnography by Goldschmidt (1951). Published work on Northern Patwin includes some vocabulary (Barrett 1919), two texts with morpheme lists and grammatical notes (Whistler 1977a, 1978) a discussion of ablaut (Whistler 1981), and a description of evidentiality (Whistler 1986). Wintun tones are described in Shafer 1961. Wintun prehistory is reconstructed on the basis of plant and animal terms in Whistler 1977b. Comparisons

of Miwok and Wintun are in Broadbent & Pitkin 1964, and of Wintu and Klamath in DeLancey 1987a,b. A comprehensive bibliography of 185 items on Wintun, including manuscript wordlists, descriptions, comparative and historical materials, and ethnological and archaeological materials, is in Pitkin 1962. Material cited here is Wintu from Pitkin's 1984 grammar unless otherwise identified.

Wintu contains 30 consonants and 6 vowels. There are bilabial, apical, lateral affricate, palatal affricate, velar, and uvular obstruents in plain, aspirated, and ejective series, plus glottal stop: *p, t, ƛ, k, q; p^h, t^h, c; p̓, t̓, ƛ̓, c̓, k̓, q̓; ʔ*. (The apicals are dental for older speakers, alveolar for younger ones. The lateral affricate *ƛ* alternates with fricative *ɬ*.) Voiced obstruents are *b, d, r*. Fricatives are postalveolar *ʂ*, velar *x*, uvular *χ*, and *h*. Resonants occur only in a plain series, with *m, n, l, r, w*, and *y*. In addition there is a *θ* which is original but rare, arising only through a certain morphophonemic rule, as well as *f* and *ʃ* in loans. There is a basic five-vowel system with contrastive length: *i, e, a, o, u; i·, e·, a·, o·, u·*, plus *æ* in loans.

The regular syllable canon is CV(·)(C). Stress depends on syllable weight. Vocalic ablaut involves alternations in both quantity and height of root vowels, producing dissimilation with certain suffixes: *lil-a* 'to transform', *lel-u* 'transform!'. There is syncope at morpheme boundaries to preserve the syllable canon. Some suffix vowels show complete harmony with the preceding syllable: *cew-eleleha* 'many to be wide open', *bo··loloha* 'to pulverize', *xi·n-ililiha* 'many to sleep separately'.

The substantive class includes free pronouns and nouns. Pronouns in Wintu distinguish first, inclusive, exclusive, second, and third persons. The third person forms are based on demonstratives. Singular, dual, and plural number are distinguished. Nouns may be based on simple roots (*mem* 'water'), compound (*mem-holoq* 'water-hole' = 'pond, well'), or derived (*pinih* 'to take lunch along', *pinih-is* 'the lunch one has taken along'). Number is distinguished with only some forms. Possession is shown by a preceding possessive pronoun. Inalienably possessed nouns, referring to some kinsmen, may be preceded by an inalienable possessive or vocative prefix: *net-pice·n* 'my daughter'. A diminutive or pejorative may follow.

An interesting feature of Wintu is the systematic, overt distinction between generic and particular pronouns and nouns, discussed by Lee (1944a,b), Pitkin (1984), and Wash (1990). Generics are unmarked for number or specificity, while particulars typically refer to finite, singular, animate entities. A generic noun like *sede* is used to refer to coyotes in general, but the particular form *sede-t* is used for the trickster character Coyote or some other specific coyote. Some nouns tend to appear only in the generic, like the mass noun 'water', while others tend to appear only in the particular, like proper names. Certain roots take on one meaning in the generic and a different one in the particular: the root *tu* is translated 'eye' in the particular but 'face' in the generic; *ma* is 'toe' in the particular but 'foot' in the generic; *ƛal* is

WINTUAN = WINTUN = WINTOON = COPEH = COPEHAN FAMILY

NORTHERN WINTUAN

Wintu: *Wintu proper (Upper Sacramento, McCloud, Stillwater, Keswick, French Gulch), Upper Trinity-Numsoos, Hayfork-Norrelmuk, Bald Hills*

Nomlaki = Noamlakee = Central Wintu: *Hill Nomlaki (Elder Creek, Paskenta, Grindstone), River Nomlaki (Red Bluff, Tehama), River Wailaki = Noema*

SOUTHERN WINTUN

Patwin = Patween: *Hill Patwin (Lodoga = Kabalmem, Tebti = Lake County, Southern Hill Patwin (Cortina and Napa, Rumsey = Cache Creek, Putah)), River Patwin (Colusa, Grimes)*

Southern Patwin*: *Knight's Landing, Dixon, Suisun*

The Wintuan languages were spoken in the Sacramento Valley of central northern California. The northernmost language, Wintu (from their *wi-nt^{h}u* 'person-animate' = 'person, people, Indian'), was spoken in Shasta, Trinity, and parts of Siskiyou counties. Schlichter 1979 notes that the nature of dialect differentiation within Wintu is unclear. Divisions have often been geographical or political rather than linguistic. She concludes that there were probably no clear dialect boundaries but rather a continuum of idiolects. The subgrouping above is from Whistler 1980. Perhaps two Wintu speakers remain (Shepherd 1989, Grant 1997). To the south of Wintu was Nomlaki (based on their *nom-* 'west'), of which few if any speakers remain. South of the Nomlaki, extending to San Francisco Bay, were the Patwin (from their *patwin* 'person'). At least one speaker remembered Hill Patwin in 1997, but Southern Patwin disappeared early with scant documentation, so its genetic status remains unclear. Pitkin compares the time depth of the family to that of Romance, noting that many similarities between Northern Wintu and Patwin are due to contact. The family was recognized by Latham in 1856 and grouped with Maiduan, Yokutsan, Miwok, and Costanoan into a (core) Penutian stock by Dixon and Kroeber in 1913.

Wintu proper is the best documented of the languages. Major published sources include a grammar (Pitkin 1984), two dictionaries (Schlichter 1981b, Pitkin 1985), and two rich text collections (Shepherd 1989, 1997). Additional texts are in the Pitkin grammar, in Pitkin 1977, 1978 and Schlichter 1978 and 1980. A discussion of evidentiality is in Schlichter 1980 and a description of Wintu shamanistic jargon, with a text, is in Schlichter 1981a. A Nomlaki wordlist is included in the ethnography by Goldschmidt (1951). Published work on Northern Patwin includes some vocabulary (Barrett 1919), two texts with morpheme lists and grammatical notes (Whistler 1977a, 1978) a discussion of ablaut (Whistler 1981), and a description of evidentiality (Whistler 1986). Wintun tones are described in Shafer 1961. Wintun prehistory is reconstructed on the basis of plant and animal terms in Whistler 1977b. Comparisons

of Miwok and Wintun are in Broadbent & Pitkin 1964, and of Wintu and Klamath in DeLancey 1987a,b. A comprehensive bibliography of 185 items on Wintun, including manuscript wordlists, descriptions, comparative and historical materials, and ethnological and archaeological materials, is in Pitkin 1962. Material cited here is Wintu from Pitkin's 1984 grammar unless otherwise identified.

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'mussel' in the particular but 'shell' in the generic. While nominalized verbs referring to agents can appear with a particular suffix (*tʰuli-t* 'swim-PARTICULAR' = 'the one who swims' = 'otter') those referring to actions or events usually appear as generics (*tʰuli* 'swimming'). The marking of a noun may change over the course of a discourse. Lee (1944b: 182) illustrates the distinction with translation from a text. A hunter went out but saw no deer (generic); another killed a deer (particular). A woman carried deer (generic) to her mother; a hunter brought home deer (particular). (The woman's deer was cut in pieces and carried as a formless mass in her back-basket, while the man carried his two deer slung whole from his shoulder.) Some brothers, about to eat venison, called out "Old man, come and eat venison (generic)." The old man replied, "You can eat that stinking venison (particular) yourselves."

Substantives are further inflected for case. Suffixes on nouns distinguish nominative (unmarked), accusative, genitive, and locative cases. The genitive is used for possessors, for instruments and for agents of passive verbs. The locative is used for both spatial and temporal location. Suffixes on pronouns and kin terms distinguish nominative, accusative, locative, possessive, and instrumental cases.

Verb roots may be simple or reduplicated: *bal* 'tell a lie', *balbala* 'tell all kinds of stories'. There are sub-morphemic alternations involving all parts of the root: *ɬew* 'blow up, sail', *tʰew* 'fly, float'; *kʼal* 'coal', *kʼel-el* 'soot'; *kʼida·* 'to gasp', *kʼi·da* 'to gasp for breath with effort'; *huɣ* 'save, hoard', *huɬ* 'be filled up'. Roots may be augmented with various affixes. Sixteen prefixes indicate location or direction: 'west', 'outside', 'on all sides', 'crosswise', 'behind', 'toward', 'away', etc: *nom-wana·* 'move west'. There are vowel harmonic distributive, repetitive, and iterative suffixes: *ćib* 'scrape with knife', *ćibi·ya* 'to whittle', and a stative: *ćit* 'grip', *ćit-el* 'to be tied tight'.

Stems are formed from simple or augmented roots. Each verb has three stems. The indicative stem, formed with *-a*, is used for realis events: *ća·w-a* 'to sing'. The imperative stem, formed with *-u*, is used for nonindicative moods and alternative voices: *ća·w-u* 'Sing!'. The nominal stem, marked with *-i*, is translated as a participle or nominal indicating the completion or product, object, or instrument of action: *ća·w-i* 'song, singing'. Different sets of suffixes appear with each stem.

Suffixes on indicative stems fall into two position classes. In the first are evidential suffixes (knowledge from hearing, touch, smell, taste; hearsay; inference; experience), a subordinating causal anterior 'because of . . .', and an approximating suffix 'almost'. In the second are subject markers distinguishing first and second person, a dubitative, a completive, a subordinating temporal anterior 'after . . .', and subordinating unexpected simultaneous: *ća·wa-weɬan* 'anyway, I'll still sing'.

Suffixes on imperative stems are the most elaborate. First may be markers indicating a particular patient, particular comitative associate, or generic comitative associate; then a reflexive or causative, then a reciprocal or benefactive. These may be followed by a monitory or passive, then inevitable future, subordinating potential 'while', first person jussive 'let me . . .', or hortative 'let him . . .', 'may she . . .' Following these may be a negative, dual cohortative 'let's . . .', necessary anterior 'before', general interrogative, first person interrogative, simultaneous or anterior temporal subordinator, or particular object marker.

To the nominalizing stems are added substantival suffixes like the particular and case, or a verbalizing suffix that derives stative or intensive intransitives.

Additional temporal and modal distinctions may be made with auxiliary verbs most of which follow the main verb. They serve as markers of negation, aspect (imperfect, durative, perfective), future intention, as progressives, desideratives, conditionals, optatives, past tense, abilitatives, inabilitatives, usitatives, and prohibitives.

Some of these structures can be seen in the Wintu passage below from a text originally published by Dixon (1909). It was reelicited by Pitkin from Carrie Dixon in 1956 and appears in Pitkin 1984: 268-9. Nominalizations can be seen in the name for Coyote, 'the field creature', and the word for 'heart', 'what breathes'. The generic/particular distinction can also be seen: 'land' and 'house' are generic, while 'Coyote' is particular. There are several locative suffixes, as on 'house' and its modifier in line 2, a negative suffix in line 4, and a reflexive in line 5.

po·m	*yel-hur-a*	*ćar-a-wa-h*	*buh-a*	*way.*
land	back-be.left-INDIC	green-INDIC-NOMINALIZER-PARTICULAR	sit-INDIC	north

'There was a big flood, and Coyote (the field creature) lived in the north.

qewel,	*wi-n-tʰu··n*	*qewel-in*	*buh-a.*
house	person-LOCATIVE-ANIMATE-LOCATIVE	house-LOCATIVE	sit-INDICATIVE

He lived in a house, an Indian house.

kʼet-e··t	*ćar-a-wa-h,*	*pi*	*kʼet-e··t,*
little-INDIC-PARTICULAR	green-INDIC-NOMINALIZER-PARTICULAR	3	little-INDIC-PARTICULAR

One Coyote, that lone one,

ʔelew	*he-ke··n*	*wi-n-tʰu··-h*	*suk-mina.*
no	3-OPTATIVE-LOCATIVE	person-LOCATIVE-ANIMATE-PARTICULAR	stand-NEGATIVE

with no humans to be seen anywhere.

ćarawa-h	*tʰaw-a-n-a·,*	*wac-a·,*	*pʰu·r-u-s*	*wac-a·.*
coyote-PARTICULAR	have.scar-INDIC-RFL-INDIC	cry-INDIC	breathe-NM-GENERIC	cry-INDIC

Coyote was sad and lonely; he cried; his heart cried.'

Yana*: *Northern Yana, Central Yana; Southern Yana, Yahi*

The Yana formerly occupied the foothills east of the Sacramento River in central Northern California, now parts of Shasta and Tehama counties. The arrival of Whites in 1846 resulted in a drastic reduction in their numbers, from 1,900 to probably less than 100 within 20 years (Johnson 1978: 362-3).

The Yana language was spoken into the first half of this century. The Northern and Central Yana dialects were mutually intelligible, and Southern Yana and its southern neighbor Yahi were almost subdialects of each other. Sapir estimated that Northern or Central speakers could understand Southern or Yahi speakers after some contact. It had been assumed that the Yahi were destroyed in the 1860s until a Yahi man emerged in 1911 after decades of hiding. Known as Ishi, he lived at the University of California Museum of Anthropology until his death in 1916, leaving a wealth of information about his language and culture. Yana has no close relatives, but was classified as Hokan by Dixon and Kroeber (1913b). Nearly 200 proposed cognate sets plus structural resemblances supporting the affiliation were presented by Sapir in 1917(a).

Most good published sources are from Sapir. Sapir 1909a, 1917a, and 1922 contain grammatical outlines, 1910c and 1923a are text collections with grammatical analysis, and Sapir & Swadesh 1960 is a dictionary with grammatical overview. Additional vocabulary is in Sapir 1916b and 1918. Nevin 1976 discusses several grammatical structures. Hinton 1988 provides a useful sketch of Yana structure. Luthin 1991 is an especially interesting work on prosody and discourse structure. Forms cited here are Northern Yana from Sapir 1922 and Sapir & Swadesh 1960.

The phonological inventory is typical of other languages in the area. There are bilabial, apical, palatal, and velar obstruents in three series: plain (*p, t, č, k*), aspirated (*pʰ, tʰ, čʰ, kʰ*), and ejective (*p̓, t̓, c̓, k̓*). (These were written phonetically by Sapir in four series: *b, d, dj, g* and *p, t, tc, k; p', t', tc', k'; p!, t!, tc!, k!*. Plain stops are voiced before vowels.) There is a glottal stop and fricatives *s, x*, and *h*. Resonants are *m, n, l, r, w, y*, and *m̓, n̓, l̓, w̓, y̓*, with devoicing in certain contexts. There is a basic five-vowel system with short and long vowels (written *î, ê, ā, ô, ū* by Sapir) and diphthongs *ai, au, ui*. Syllable-final *m* and *n* have become *b* and *d* in Northern Yana, and Jacobsen 1976 shows by internal reconstruction that aspirated stops are also of secondary origin. Word stress is normally on the first heavy syllable. Modern Americanist symbols will be substituted here for Sapir's earlier ones for readability.

The language is polysynthetic. Noun roots occur alone or with suffixes. Suffixes include a locative ('place of, at'), diminutive singular, diminutive plural, collective, distributive 'scattered pieces', and an absolutive ending *-na* added in male speech to consonant-final or monosyllabic nouns (Northern Yana *ya·-na* 'person'). There is diminutive consonant symbolism whereby *l* is shifted throughout a word to *n* (*d* syllable-finally in Northern Yana), usually in combination with a diminutive suffix *-p̓a* or *-c̓ka*: *ma·liwal-* 'wolf' versus *ma·niwad-p̓a* 'little wolf'. Possessive suffixes distinguish first person singular and plural, second person singular and plural, third person ('one's own'), and 'other' ('someone else's'). Nouns appear with some of the same enclitics as verbs: *ya··xa* 'former (=PAST) people', *ya··k̓u* 'perhaps a person'.

Verbs consist of what Sapir analyzed as a primary stem, often followed by a secondary stem, an incorporated noun, one or more derivational suffixes, tense/mode suffixes, pronominal suffixes, and enclitics. Many combinations of primary and secondary stems are similar in meaning to sequences of instrumental prefixes followed by roots in other California languages, such as some that begin with *pa-* and denote kinds of calling: *pa-c̓ʰti-ʔa* 'to shout', *pa-wau* 'to call on people to come', *pa-čipa-* 'to call by messenger at every place'. (Compare Central Pomo *ba-ʔól* 'orally-summon' = 'call', *ba-ném* 'orally-hide' = 'lie'.) In a few instances the meaning of the stem includes a number or gender distinction: *wa-* 'for one to sit' versus *yai-* 'for several to sit'; *ni-* 'for a man to go', *ha-* 'for a woman to go', *han-* 'for several to go'; *puri-* 'for a man to dance' versus *čari-* 'for a woman to dance (to perform a woman's dance)'. Following the verb stem(s) may be an incorporated noun: *či-wai-si* 'taste-deer-NON.PAST' = 'it tastes like deer'. Yana contains a large number of derivational categories, including some that alter transitivity, such as a causative, benefactive, and instrumental ('by means of'). Vocalic ablaut in verb stems accompanies changes in transitivity. High or low 'apex' vowels appear with primary intransitives such as *tu·-* 'to do', with passive or inverse formations such as *maʔi-* 'to be eaten', and with imperatives *maʔiʔ* 'Eat it!' Mid vowels appear with causatives such as *to·- . . . -ʔa* 'cause to do' and primary transitives such as *mo·-* 'to eat'. The contrast can be seen in *di̓waisiwaʔa* 'he is seen' versus *de̓waisi* 'he sees him'.

Other derivational suffixes contribute adverbial meaning: 'unwillingly', 'slightly', 'excessively', 'to pieces', 'again', 'early in the morning', 'all day', 'too late'. Many specify location or direction. Some have relatively general meanings: 'up', 'down', 'on', 'inside', 'behind', 'off', 'hither', 'backwards', 'straight ahead', 'in a circle'. Others are more specific: 'out of enclosed space into open, out of mouth', 'in the head', 'in the fire', 'to the west', 'from the west', 'in a zigzag line', 'across a stream'.

Inflectional suffixes follow. Various tense, aspect, and mode suffixes may cooccur. These mark remote, past, non-past, future, perfect, and usitative events; personal experience, hearsay, inference; imperative, hortatory, interrogative; intentive, dubitative, and potential. These markers are followed by pronominal suffixes which distinguishe three persons (first, second, and unmarked third), and two numbers. They are similar in shape to possessive prefixes on nouns. Transitive verbs show an inverse system. When the direct object is a first or second person, the inverse segment *-wa-* appears. The system is clearest when a first or second person is acted

on by a third.

-nča	'I (--him)'	*-niki*	'we (--him)'
-wa-nča	'he--me'	*-wa-ʔniki*	'he--us'
-nu(ma)	'thou (--him)'	*-nuka*	'you pl (--him)'
-wa-ʔnu(ma)	'he--thee'	*-wa-ʔnuka*	'he--you pl'

When a first person is acted on by a second person, or a second by a first, the inverse marker precedes the objective pronoun minus its initial nasal: *-ča-* 'thou--me', *-ma-* 'I--thee'. Finally, certain enclitic elements may appear at the end of the verb, including positive and negative interrogative elements and emphatic affirmatives.

A well known aspect of Yana is its distinction between male and female speech forms, described in Sapir 1929c and Luthin 1991. 'Male' forms are used between males, and in formal address by males to a mixed audience or mother-in-law. The difference between the two, described in section 5.2, is sometimes phonological, sometimes morphological: *kāki* vs *kākʰi* 'crow'; *ʔi-na* vs *ʔi-* stick-ABSOLUTIVE 'stick'.

The passage below is from a Northern Yana text told by Betty Brown (Sapir 1923a: 277). The voicelessness and aspiration at the ends of the lines are female forms.

hahtái-wau-nʔ-hà-nčʰ
dream-about-REMOTE.PAST-PERSONAL.EXPERIENCE-1SG
'I dreamt.

a-wí·l-au-nʔ-ha-nč	*ai*	*či-ƛ̓áuʔ,*
one.woman.go.off-across.creek-east-REMOTE.PAST-PERS.EXP-1SG	3	flow-be.caught
I went off towards the east across a dried-up creek;		

p̓alé-wi-ʔinikui-ʔnè-x	*aitcʻ*	*xaʰ*
moss-COLLECTIVE-be.full.of-REMOTE.PAST-PERSONAL.EXPERIENCE	3	water
the creek bed was all covered with moss,		

ta-c̓kái-sa-nʔ-ʰ	*ai*	*p̓alé-ɣ*
look-be.green-away-REMOTE.PAST-PERSONAL.EXPERIENCE	3	MOSS-COLLECTIVE
it was green with moss.		

wáiʕ	*a-hčám-nʔ-ha-nč*	*aicʻʰ*	*i·ɣq.*
now	one.woman.go.off-north-REMOTE.PAST-PERSONAL.EXPERIENCE-1SG	the	trail
Now I went to the north along the trail.'			

YOKUTSAN = YOKUTS FAMILY

Valley Yokuts: *Far Northern Valley (Yachikumne = Chulamni, Lower San Joaquin, Chalostaca, Lakisamni, Tawalimni), Northern Valley (Noptinte, Merced, Chawchila, Northern Hill (Chukchansi, Kechayi, Dumna)), Southern Valley (Wechihit, Nutunutu/ Tachi, Chunut, Wo'lasi/ Choynok, Koyeti/Yawelmani= Yowlumni, Wowol, Telamni)*

Foothill Yokuts: *Gashowu, Kings River (Chukaymina, Michahay, Ayticha= Aiticha=Kocheyali, Choynimni=Choinimni), Tule-Kaweah (Wikchamni, Yawdanchi = Nutaa, Bokninuwad), Buena Vista (Tulamni, Hometwali)*

Palewyami = Poso Creek = Altinin

The Yokuts languages (from native terms for 'person' or 'Indian'), were spoken over the entire San Joaquin valley of interior southern California and adjacent foothills. It is estimated that there were over 40 linguistically distinct groups, but because of disease, missionization, the gold rush, and early settlers, most are now gone. Only a few elderly speakers remain, primarily Yawelmani and Tachi.

The internal structure of the family is a complex issue. Differentiation is not uniform: while there is considerable lexical diversity, phonology and grammar are generally similar. Golla suggests that communities distinguished themselves by vocabulary, but individuals were multi-dialectal, using the host dialect on frequent visits (p.c. 1994). Data are scarce for many of the dialects. Crucial sources are a survey of 21 dialects made by Kroeber in 1906 (1959, 1963) and recordings made by Harrington over 40 years. The above subgrouping is based on Whistler & Golla 1986 and suggestions from Geoffrey Gamble in 1987. Yokuts was grouped in Dixon & Kroeber 1913 with Wintuan, Maiduan, Miwok, and Costanoan into core Penutian.

The first published Yokutsan material in the 20th century is Kroeber's early descriptions (1906, 1907b). Newman provided a preliminary description of Yawelmani (1932), discussions of stylistic devices (1940) and word classes (1966), an elegant grammar with material from Yawelmani, Chukchansi, Gashowu, Chawchila, Choynimni and Wikchamni (1944, reviewed in Harris 1944), and a shorter but still extensive sketch of Yawelmani (1946). Hockett composed a restatement of Newman's Yawelmani sketch (1967b) and an annotated bibliography of Yokuts work from 1900-67 (1973). Collord 1968 is a grammar of Chukchansi. Beeler 1971 contains the 1819 and 1821 Noptinte manuscripts of Arroyo de la Cuesta with translation and discussion of graphemics, phonology, and morphology. Gamble 1978 is a grammar of Wikchamni. Berman 1980 contains two texts in Chukchansi, Gamble 1980a a text in Wikchamni, and Gamble 1994 texts from 8 dialects. Gamble describes a senary counting system in Chunut (1980b) and switch-reference in Wikchamni (1998). Britsch (1984) treats Tachi conditional and hypothetical constructions. Golla 1964a is a comparative

Yokutsan phonology based on material from Yawelmani, Yawdanchi, and Chukchansi. Golla 1980 contains 108 Yokutsan-Maiduan correspondence sets, Whistler & Golla 1986 a reconstruction of the Proto-Yokutsan sound system, and Gamble 1988 a reconstruction of pronouns. Material cited here is Yawelmani from Newman.

Because of its elaborate but regular vocalic ablaut, Yokuts has repeatedly served as a testing ground for models of generative phonology, beginning with Kuroda's 1967 restatement of material from Newman, reviewed in Hockett 1973. Further work that focused on the importance of the same data for phonological theory and especially the question of abstractness is listed in an annotated bibliography by Pullum (1973). Archangeli (1984a,b, 1991) analyses the data in terms of underspecification theory, and Steriade (1986) provides an alternative. Archangeli 1985 discusses harmony.

Yawelmani contains labial, dental, retroflex alveolar, palatal, and velar stops in three series: plain (sometimes lightly voiced) which Newman writes *b, d, ḍ, g*; aspirated which Newman writes *p, t, ṭ, k*; and ejective *p̓, t̓, ṭ̓, k̓*. There are dental and palatal affricates in the same three series: *ʒ, z; c, č; c̓, c̆̓*. Voiceless fricatives are dental (*s*), retroflex alveolar (*ṣ*), and velar (*x*). Laryngeals are *h* and glottal stop *ʔ*. Resonants occur both plain and glottalized: *m, n, ŋ, l, w, y; m̓, n̓, ŋ̓, l̓, w̓, y̓*. The *n* is dental but the *l* is alveolar. Vowels are *i, i·, e, e·, a, a·, ɔ, ɔ·, u*, and *u·*. Syllable structure is CV(·)(C), and stress is basically penultimate, with certain exceptions.

There is little alternation involving consonants, apart from traces of early consonant symbolism (Gamble 1975), but there is extensive vocalic ablaut of several kinds. Vowels in roots occur in four sets, each with a 'weak' and a 'strong' member: weak *a*, strong *a·*; weak *ɔ*, strong *ɔ·*; weak *i*, strong *e·*, weak *u* strong *o·* (phonetically *ɔ·*, identical to the strong counterpart of *ɔ*). All basic roots contain two vowels from the same set: *xata* 'eat', *ṣa·pa* 'burn', *pana·* 'arrive'; *giyi* 'touch', *me·k̓i* 'swallow', *ʔile·* 'fan'. Suffixes also show harmony. Each suffix appears in two forms. Some suffixes show an alternation between *i* and *u*, like the aorist *-hin/-hun*: *yawa[·]l-hin* '(he) followed', *pulwiyi-hin* '(he) popped out', *nine··hin* '(he) becomes quiet', but *ćo[·]m-hun* '(he) devoured', *duyduy-hun* '(they) sting repeatedly'. The *i* forms appear after stems of the *a*, *ɔ*, and *i* sets, and the *u* forms after stems of the *u* set. Other suffixes show either an *e/o* alternation, like the future *-en/-on*, or an *a/ɔ* alternation, like the dubitative *-al/-ɔl*. The contexts governing each alternation are as follows:

Suffix alternates	Stem set	suffix	Stem set	suffix
i/u	*a, ɔ, i*	*i*	*u*	*u*
e/o	*a, ɔ, i*	*e*	*u*	*o*
a/ɔ	*a, i, u*	*a*	*ɔ*	*ɔ*

Suffixes with more than one vowel also show harmony. If both suffix vowels belong to the same vowel set, both alternate, as in the agentive nominalizer *-ihne·/-uhno·*. Otherwise, only the first vowel alternates, as in *-iyo/-uyo·* 'do first'.

A third major type of vocalic change is complex but highly regular. Each vowel in a root can appear in a variety of forms; examples will be given here for the basic vowel *a* and the basic vowel *e·*. The form may be Full (*a, e·*), Broken (*a, i'i*), Strong (*a·, e·*), Weak (*a, i*), Strong-glottal (*a', e'*), Weak-glottal (*a, i'*), Long (*a·, i·*), Zero (∅, ∅), I-induced (*i, i*), E··induced (*e·, e·*), A-induced (*a, a*), 'a-induced (*'a, e·*), and Reduced, which may be zeroed (∅, *e·*), dulled (*i, e·*), retained (*a, e·*), strong-zeroed (*a*, ∅), or strong-dulled (*a, i*). Each suffix requires a particular grade of the root, expressed by a vocalic formula. The zero grade stem, for example, has the vowel sequence Weak + Zero; the root *me·k̓i* 'swallow' has the zero grade stem *mik̓-*.

Other minor phonological processes apply to these forms, often preserving the syllable canon. Many vowel-initial suffixes show initial truncation after another vowel; many consonant-initial suffixes show initial truncation after two consonants.

Morphologically, Yokutsan shows primarily reduplication (*kenke·n* 'porcupine', *me·k̓ime·k̓i* 'swallow repeatedly') and suffixation. Noun and verb roots are distinct, although noun roots may be verbalized and verb roots nominalized. Newman illustrates these processes with the phrase *'ilaknihne·'in ṭi'* 'a song-maker's house'. The first word consists of the verb root *'ilik* 'sing', nominalized (here by zero conversion) to *'ilik-* 'song', verbalized with the acquisitive suffix *-na·* to yield *'ilak-na·* 'make a song', nominalized with the agentive suffix *-ihne·* to yield *'ilakn-ihne·* 'song-maker', then finally inflected with the genitive case suffix *-in*.

On nouns, number is not normally distinguished, although a few nouns referring to kinsmen, tribes, and certain other persons show plural forms derived through one of seven types of ablaut: *nuso·s* 'paternal aunt', plural *no·sas*; *ṭon̓ɔ·ṭim* 'transvestite', plural *ṭɔ[·]n̓ṭim*. Pronouns and demonstratives are free and distinguish singular, dual, and plural number. Nouns, pronouns, and demonstratives are obligatorily inflected for case: nominative, accusative, genitive, dative, ablative, and locative are distinguished. All elements of a noun phrase, including appositives, bear case suffixes.

Verbs consist of a root, optional thematizing non-final suffixes, an optional auxiliary suffix, and an obligatory final suffix: *gidwinxɔ·hin* '(he) was getting surrounded' consists of the root *gidiw* 'surround', thematizing mediopassive *-in*, durative auxiliary *-xɔ·*, and final aorist *-hin*. The thematizing suffixes perform several kinds of semantic functions. Some affect argument structure: passive (*yuk̓ul-han̓-am̓* '(he) was buried'), mediopassive (*yɔlɔw-n-en* '(they) will assemble'), comitative (*'ilik-mix-hin* '(he) sang with (him)'), benefactive (*dugogla··sit-hin* '(he) straightened (it) for (him)'), reflexive (*ṭuy-wus-hun* '(they) shot themselves or each other'), and others. Some distinguish aspect: duratives, resultant state, repetitive, continuative, distributive, inchoative, celerative, and retardative. Some distinguish mode: desiderative, hortatory/prioritive, and exclusive ('do nothing but . . .'). Final suffixes distinguish mode, tense, or subordination. Mode markers include an imperative, precative 'let me', and

dubitative. Tense markers include an aorist, a narrative aorist, a passive aorist, a future, and a passive future. The subordinating suffixes include a consequent gerundial ('having Ved'), contemporaneous gerundial ('Ving'), resultative gerundial ('in order to V'), passive gerundial ('being Ved by N'), and others.

A special kind of expressive verb is formed from a proclitic, usually onomatopoeic, and the verb *wiyi* 'do, say': *'uhwiyi* 'to cough', *buḱwiyi* 'to make a thump', *hiḱwiyi* 'to hiccup'. Such verbs undergo regular morphological processes, including reduplication (*buḱbuḱwiyi* 'make thumping sounds repeatedly, here and there'), and rhetorical lengthening of the proclitic vowel for retardative aspect (*hi·ḱwiyi* 'make a panting sound').

Various nominalizers also occur with verb stems, some creating agentive nouns (*xata·'iċ* 'eater' from *xata* 'eat'), and some creating adjunctive nouns that refer to any entity associated with an event except the agent (*xata·'e·y* 'food', 'place, time, or instrument of eating', 'fork', 'mouth', 'hands').

The passage below comes from a tale told by Ross Ellis in 1930 (Newman 1944: 240). In the transcription here, *b, d, ḍ,* and *g* are used for the plain stops; *p, t, ṭ,* and *k* for the aspirated ones. Shifts in root shape can be seen by comparing the first and second lines of verbs 'come' (Strong grade), 'steal' (A-umlauted strong), 'play', 'throw', 'do', and 'take', and of nouns 'children' and 'basket'. Suffix harmony affects the durative present suffixes. The verb 'do' is a gerundive. Word order is flexible.

'ama	*'ama·maw*	*ni'wɔw*	*taxan'an.*
'ama	*'ama·maw*	*ni'wɔw*	*taxa·-in-'an*
and	3SG.LOC	late	bring-MEDIO.PASSIVE-DURATIVE.PRESENT

'And she comes there late in the afternoon.

'ama'	*'uɬa·'an*	*kin*	*witibhaḉ*	*heḱyaċhi.*
'ama'	*'o·ɬu-'an*	*ke·-in*	*wite·b-ha·ḉ-ɸ*	*hiḱiy-iċ́-h-i*
and	steal-DURATIVE.PRES	this-ACC	child-PL-ACC	play-AGENTIVE.NOMINALIZER-ACC

And she steals the children who are playing,

'ama'	*ɬan*	*'ansiw*	*'amin*	*ḱɔ'ɔ·'ɔn.*
'ama'	*ɬa·-in*	*'ana·s-w*	*'amin*	*ḱɔ'ɔ-'ɔn*
and	this-ACCUSATIVE	basket-LOCATIVE	3SG.GENITIVE	throw-DURATIVE.PRESENT

and she throws them into her basket.

'ama'	*'ama·minwa*	*wiymi*	*tánaxɔ'*	*ɬew*	*'amin.*
'ama'	*'ama·minwa*	*wiyi-mi*	*tana·-xɔ·*	*ɬe·-w*	*'amin*
and	3PL.ACC	do-CONSEQUENT.GER	take-DURATIVE.PRESENT	house-LOC	3SG.GEN

And after doing thus, she takes them to her house.'

Yuchi = Euchee

Yuchi is spoken fluently by about a dozen elders near Sapulpa, Hectorsville, and Bristow in northeastern Oklahoma (Mary Linn p.c. 1999). The Yuchi came to Oklahoma from Georgia during the Removal of 1836-40, when southeastern groups were forced west (Haas 1979: 310). They accompanied the Creeks, with whom they had been affiliated since the 18th century. The Yuchi language is not closely related to any other, but the possibility of a distant genetic relationship to the Siouan family was suggested by Sapir (1921, 1929) and taken up again in Haas 1951, 1964a, Elmendorf 1964, Rudes 1974, and Crawford 1979, which also contains an overview of work on the language. A remote relationship to Siouan appears probable.

Several wordlists were collected during the 19th century. Material recorded by Daniel Ware and by John Ridge around 1820 appears in Gallatin (1836: 307-67). A short note on the Yuchi and their language is in Gatschet 1885. Speck collected vocabulary and texts during ethnographic fieldwork between 1904 and 1908. Yuchi terms appear in his ethnography (1909) and songs are in 1911. Additional material is in the National Anthropology Archive. The first extensive published documentation of the language is a set of texts in Wagner 1931 and a grammatical sketch in Wagner 1933. Further work on phonology appears in Wolff 1948, Crawford 1973, and Ballard 1975. Morphology, especially pronominal prefixes, are discussed in Wolff 1948 and Ballard 1978. Noun classification is further described in Linn 1997 and positionals in Linn 1996. Ballard (1980) notes that morphemes in the language are so easily segmented that they are nearly free forms rather than affixes. Wolff also published a text in 1951. Working from data in Wagner, Benveniste discussed negation (1950).

The sound system of Yuchi has been analyzed in several different ways, with recognition of between 19 and 40 consonants. Chief differences are whether a full series of glottalized consonants is distinguished or interpreted as C^{ʔ} clusters, and whether another series is analyzed as labialized obstruents (C^{ʷ}) or Cw clusters. There are plain obstruents *p, t, c, č, k, ʔ*, voiced counterparts *b, d, dz, ǰ, g*, aspirates *p^{h}, t^{h}, c^{h}, č, k^{h}*, fricatives *f, s, ɬ, š, h*, and resonants *m, n, w, l, y*. There are oral and nasal vowels. Length is seen by some as distinctive, though often the result of contraction.

The most complete description of Yuchi structure is in Wagner 1933, from which the following material is drawn. His transcription and analysis are retained here. Noun stems themselves may be simple (*i* 'tobacco'), compound (*yǫ-spá* 'nut-oblong' = 'pecan'), or derived from adjectives or verbs. The nominalizer that derives nouns from active verbs has the same form as the habitual aspect *-nɛ*: *b'axtɛ-ła-né* 'horse-eat-HABITUAL' = 'oats'. Nouns contain suffixed articles that distinguish several classes. Animates are differentiated from inanimates. Among the animates, there is a distinction between members of the tribe (further subclassified according to degree

of kinship and male versus female speech) and all other animates. Inanimates are classified according to their shape or position as upright (standing poles, trees, high mountains, tall houses), horizontal (lakes, streams, roads, fields, logs lying on the ground), or neither (rocks, bushy trees, chairs). Abstract nouns may be classed as any of the three. Plural articles simply distinguish tribal members, other animates, and inanimates. Reduplication indicates distribution: 'here and there', 'now and then', or significant individuation. Location is usually indicated within the verb or by various particles following the noun, but there are also four locative suffixes for nouns: *-hɛ* 'at, to', *-lɛ* 'along, back to', *-kɛ* 'yonder', *-fa* 'toward'. Possessive pronouns may be prefixed to the noun: *tsǫ-g'aχté* 'my horse', *sǫ-b'aχté* 'your horse'.

Verb stems may be simple roots (*ho* 'to plant'), compound (*ɔndadígɛ* 'plain-I-say' = 'I explain'), or derived (*tsɛ-ʔɛ́* 'rain-VERBALIZER' = 'it rains'). They are usually preceded by pronominal prefixes similar in form to the possessive prefixes on nouns. The pronouns distinguish first, second, inclusive, exclusive, and third persons, and, within third person, tribal members (differentiated according to degree of kinship and the gender of the speaker), other animates, and inanimates. Singular and plural are distinguished in first and second person. There are several series of pronouns: 1) intransitive subject prefixes (also used in clauses with general objects), 2) ergative subject prefixes, 3) independent emphatic subject pronouns, 4) general object prefixes, 5) specific object prefixes, and 6) indirect object prefixes. An agent/patient pattern can be discerned in the use of object prefixes with a number of intransitive verbs, including 'be full', 'be wounded', 'tremble', 'recover'. Reflexives are contracted forms of 1) or 2) plus 4): *tsɛ-di-l'ĩ* 'I cut myself' (1SG.OBJ(4)-1SG.SUBJ(1)-cut); *tsɛ-do-cí* 'I pity myself' (1SG.OBJ (4)-1SG.SUBJ(2)-pity). The pronominal prefixes may be followed by the reciprocal prefix *k'a-* (*hǫk'ák'ɛntné* 'they visit one another'), or the comitative *k'ǫ-* (*hɔnǫ̀dzək'ǫ́ladjɯn* 'they went with us'). A prefix *hi-* indicates that the grammatical object is an instrument, like the knife in *yǫl'ĩ hi-dok'ǫ* 'knife I.make.with' = 'I make. it.with a knife'. A set of locative prefixes precedes the pronominal prefixes, contributing meanings 'here', 'there', 'inside', 'inside the earth or under water', 'in(to) the water', 'on', 'under', 'through', 'out', 'up in the air', and 'across': *a-* 'there' (*ádioχtɛ* 'I put there' = 'I keep'), *ti-* 'inside' (*ridíwi* 'I enter', *rídifa* 'I am in' = 'I wear').

A set of tense suffixes distinguish 1) incomplete past, 2) completed past or pluperfect, 3) near future, and 4) distant future. Wagner notes that usually only the last verb in a sentence carries a tense marker. Additional temporal distinctions are specified with combinations of the tense suffixes and modal elements. The modes include 1) an infinitive (the stem plus impersonal pronoun), 2) the unmarked indicative, 3) imperative *-nǫ* (*hohǫlé-nǫ* 'catch him!'), 4) hortative *-wǫ* (*ǫk'ák'kʌnté-wǫ* 'let us play together'), 5) potential *-go* (*diwadó-go* 'I may go'), 6) emphatic *-hǫ/-wɛ* (*nɛnkja-hǫ́* 'he did say!'), 7) abilitative *-tɛ* (*kɛyǫfé-tɛ* 'they could go there'), and 8) interrogative *-lə* (*hǫtsá-lə* 'Does he sleep?'). Aspectual suffixes include a continuative/durative *-la·* (*yǫfé-la·* 'they kept going') and a habitual *-nɛ* (*hɛk'o-né* 'he uses', *hendits'ɛ-né* 'I used to think'). Reduplication indicates iteration and distribution: *wépapa* 'he cut up (into pieces)', *wɛkʰot'at'á* 'he zigzagged around'.

Clitics such as the negative *na=/ha=* are attached to full phrases or sentences: *na=tcyáditcya ditadjín* 'not into the water I jump I wanted' = 'I did not want to jump into the water.' Basic constituent order is SOV. A clause may be coordinated with or subordinated to the following clause by means of an enclitic following its verb. Coordinating enclitics contribute the meanings 'therefore/and so', 'and/also', 'only and then', and 'but'. Subordinating enclitics are translated 'if', 'while', 'when', 'when', 'before', 'after', 'everytime when', 'whether', and 'where': *nákɛ'ɛcá=ya nɛha'è'wí* 'If you do not do so your life will be lost.' Relativization is indicated by an enclitic *=cɛ* and/or classifying article following the final element of the relative clause: *k'aláwɛgwaçɛ́ha* 'the things (*=ha* PLURAL) that he had said'.

The passage below comes from a tale recorded by Wagner (1931: 12-9).

sahǫ́-t'ɛ *wé-tnǫ-hà-nɛ* *yǫ-ts'ots'o-né* *wɛ-yáli-nɛ*
time-one NON.YUCHI-woman-old-NOM NON.YU-daughter.RDP-NOM NON.YU-young-NOM
'Once an old woman

nǫwé *yǫ-nǫ́* *go-dji-djɯ́n.*
two NON.YUCHI-have HUMAN-sit-PAST
lived with her two daughters.

go-yàłi-nɛ-wénǫ *lɛ-wénǫ* *wàtnɛ-nɛ-wénǫ* *go-yɔn-tʰá*
HU-young-NOM-NON.YUCHI that-NON.YUCHI women-RDP-NON.YU HU-NON.YU-want
Young men wanted to marry those young women,

yǫ-fɛ-djúlɛ *na'=alè-yǫ-ga-lɛ-djɯ́n.*
NON.YUCHI-go-PAST.REPETITIVE NEG=there.back-NON.YUCHI-come-again-PAST
but everytime they went there they did not come home again.

sahǫ́-t'ɛ *go-yáłi-nɛ* *go-nǫ́wé* *yǫ-fɛ-djɯ́n.*
time-one HUMAN-young-NOM HUMAN-two NON.YUCHI-go-PAST
Once two young men went there.

a-yǫ-gá' *a-o-há* *wá-ha-nɔnǫ* *á-yǫ-gwa*
there-NON.YUCHI-come there-and-be NON.YU.woman-old-NOM-NON.YU there-NON.YU-say
They got there, and while they were there the old woman said to them, ". . ."

Yuki*: *Yuki Proper, Huchnom, Coast Yuki*

The Yuki language consists of three dialects originally spoken in northern California: Yuki Proper, spoken around Round Valley and Eden Valley in Mendocino County; Huchnom, spoken from just north of Round Valley south along the Eel River into Potter Valley; and Coast Yuki, spoken along the Pacific coast from Usal Creek southward about 20 miles. No known speakers remain.

Yuki has traditionally been considered related to Wappo (Powers 1877, Powell 1891, Kroeber 1906, 1911, 1925b, Elmendorf 1968, 1981, 1997), but Sawyer (1980) concludes that shared lexical items are too similar to be cognates and more likely the result of diffusion. There have been a number of hypotheses about deeper relations between Yuki-Wappo and other North American languages. Kroeber 1907 noted both Hokan and Penutian traits in their structure. Sapir (1929) classified them as a separate branch of his Hokan-Siouan. Elmendorf noted similarities to Siouan and Yuchi (1963, 1964). Possible remote relations are discussed in section 6.3.

Major published sources for Yuki are a grammatical sketch with text in Kroeber 1911, the complete lexical corpus of Yuki Proper from all sources in Sawyer & Schlichter 1984, and a reconstruction of Proto-Yukian in Schlichter 1985. Forms cited here are Yuki Proper from Sawyer & Schlichter 1984 in the original transcription.

The phonological inventory is straightforward. There are bilabial, dental, alveolar, palatal, and velar obstruents in both plain and ejective series, and glottal stop: *p, t, ṭ, č, k; p̓, t̓, ṭ̓, č̓, k̓, ʔ*. The ejectives contrast with sequences of obstruent plus glottal stop. The two sibilants are alveolar *s* and palatal *š*. The five resonants *w, l, y, m, n*, have glottalized counterparts *ẇ, l̓, ẏ, m̓, n̓*, but these appear only in morpheme-final position. All dialects show five vowels, both long and short: *i, i·, e, e·, a, a·, o, o·, u, u·*; Yuki Proper also contains a nasalized *ą*. In an unpublished note in 1933, Uldall suggested that Yuki was a tone language, but Schlichter has concluded that the tone is an effect of stress. Primary stress, on the first syllable of the stem, is accompanied by very high pitch, while secondary stress may be accompanied by lower pitch.

All roots can occur as words alone. There are two patterns of affixation, one for nouns, pronouns, demonstratives, quantifiers, and numerals, the other for verbs and adjectives. A number of roots, such as *ṭ̓il* 'add, count, read, addition', can function as either nouns or verbs and appear with either pattern of affixation. There are numerous compound noun stems: *mil-hąp* 'deer-song', *hul-wak* 'eye-shake' = 'loose woman'. Noun stems may also be derived by means of a variety of nominalizing suffixes: *loh-mo?l* 'cough-er' = 'throat', *on-am* 'earth-pertaining.to' ='earthworm'. There are several pairs of number suffixes, one singular/plural pair for nouns for plants and animals, another for pronouns and some nouns for persons, and a collective that functions as the usual plural for certain persons and objects, including

houses. The case suffixes include a patient case *-a* for nominals referring to animates: *musp-ą* 'woman'; a comitative-instrumental: *mipaią* 'with the hand', *?it-ą ki? ko·mek* 'he came walking with me'; and various locatives: *han-am* 'in the house', *han-op* 'onto the house', *han-ha·net* 'underneath the house', *han-kel* 'against the house', *han-hampis* 'behind the house', *han-k̓il* 'toward the house'.

Kroeber counted around 75 verbal suffixes. Among these are an inchoative, conative ('try to'), abilitative ('can'), causative, reflexive/reciprocal, inchoative or inceptive, semelfactive, an unintentional intransitive marker *(mak-ita* 'awaken'), and an inanimate involuntary action marker (*ąṭai-m-ik* 'shoes creak'). Among the inflectional affixes are a durative, momentaneous, imperfective, perfective, continuative-iterative, ambulative, purposive, past habitual, resultative, a progressive of invisible progress and one of visible progress. Modal suffixes include a declarative, interrogative, imperative, potential, and volitional, typically used for future.

Pronouns are generally independent words rather than verbal affixes. First person singular, inclusive, exclusive, second person singular, and second person plural forms are distinguished. For third persons, distal demonstratives are used or nothing at all. Case marking of animates follows an agent/patient case pattern, like that of the neighboring Pomoan languages. Agent forms refer to performers of voluntary actions, such as running or jumping. Patient forms refer to performers of involuntary actions such as hiccupping or vomiting, of mental activities such as thinking, knowing, liking, fearing, hating, or rejoicing, and for those in states like being hungry, sleepy, sick, alive, dead, good, large, or small. Transitive verbs like 'hit' appear with an agent and a patient; those like 'know' appear with a patient and a possessor. In two instances pronouns are cliticized. First or second person patient forms are procliticized to kinship terms to indicate inalienable possession: *?i·=laya?* 'my brother-in-law'. The last two speakers provided verbs with encliticized patient pronouns: *ša·t-eš-t-ek=?i·* 'cold-CONTINUATIVE-UNINTENTIONAL-DECLARATIVE=1SG.PATIENT' = 'I'm getting cold' (Elmendorf 1981: 4).

Clauses are combined with either subordinating verbal suffixes or a connective particle. Subordinating suffixes include *-op* 'when' (equivalent in form to a nominal locative), *-kit* 'while, when', *-ika* 'if, when', and *-han* 'although, even though'. Relativizing subordinators, which contain the demonstrative *ki*, include *-namli-ki* 'who', 'which', *-namli-ki-t-a* 'where', literally 'at which', and *-mi-ki* 'when'. One set of connective particles, based on *są*, introduces clauses with no change in subject, while another set, based on SI, introduces clauses with different subjects. Both of these bases may be followed by suffixes that further qualify the link: *-k* 'and' for contemporanous events, *-kit* 'and then', *-m* 'and finally', and *-ką* 'thereupon'.

The connecting particles, encoding continuing or same subject can be seen in the lines below from Kroeber 1911: 376-7. The first line shows the verb 'watch' with

agent and patient case arguments. The last shows the verb 'know' with patient and possessive case arguments. The evidential *i·/ei*, sometimes cliticized as *=éi* indicates mythic time rather than knowledge from direct experience on the part of the speaker.

si-ką́	*ąp*	*mis*	*kup*	*náuni*
and.DIFFERENT.SUBJECT-thereupon	1AGENT	2PATIENT	sister's.son	watch

"Then I will watch you, Sister's Son."

si=éi	*hąyé*	*ki·*	*ǩáml-ič*	*i·*
and.DIFFERENT.SUBJECT=MYTHIC	now	that	panther-DIMINUTIVE	MYTHIC

And now, it is said, that Wildcat

hąyé	*ki·*	*mil-ǩú=ei*	*su·p-ák-mil*	*á?-ei*
now	that	deer-heart=MYTHIC	throw-SEMELFACTIVE-finite	slope-LOCATIVE

threw that deer heart on the slope.

se=éi	*hul-ko?ói*	*náu-mil*
and.DIFFERENT.SUBJECT=MYTHIC	eye-gopher	look-FINITE

And Coyote watched.

se=éi	*hąšá*	*su·p-ák-mil*	*á?-ei*
and.DIFFERENT.SUBJECT=MYTHIC	again	throw-SEMELFACTIVE-FINITE	slope-LOCATIVE

And again he (Wildcat) threw it on the slope.

se=éi	*ki-pákot*	*ǫíš-ti*	*ei*
and.DIFFERENT.SUBJECT=MYTHIC	that-back	roll-unintentionally	MYTHIC

And, it is said, as that was rolling back,

hul-ǩó-a	*muk-láw-et-mil*
eye-gopher-PATIENT	bite-move.to-involuntarily-FINITE

Coyote involuntarily moved to snap it.

sop=ei	*ǩám-l-ič*	*ǩin-íčtl-mil*	*są=éi*
for.that=MYTHIC	panther-DIM	cry-DIM-FINITE	And.SAME.SUBJECT-MYTHIC

For that, it is said, Wildcat almost cried. And, it is said,

háye	*há·-ɬl-mil*	*kait*	*i·*	*mi·t*	*nąnák-u.*
now	carry-CAUSATIVE-FINITE	long	1PATIENT	2POSSESSIVE	know-PAST

now he (Wildcat) took it. "I have known you for a long time."

YUMAN-COCHIMI FAMILY

YUMAN

CALIFORNIA-DELTA

CALIFORNIA: DIEGUEÑO

'Iipay = Ipai = Northern: *Mesa Grande, Santa Ysabel, San Pasqual, Barona*

Kumeyaay = Central-Eastern: *Baron Long, Campo, Iñaja, Imperial, Kumeyaay = Kamia (Cuyapaipe, Manzanita)*

Tiipay = Tipai = Southern: *Jamul, San José, La Huerta; San Jose de la Zorra, Neji, Ha'a*

DELTA: **Cocopa**, *Halyikwamai* = Kikima, Kahwan**

RIVER

Yuma = Quechan = Kwtsan = Kwtsaan

Maricopa: *Maricopa (Laveen, Lehi), Halchidhoma*, Kavelchadom**

Mojave = Mohave

PAI

Upland Yuman = Northern Pai: *Havasupai, Hualapai = Walapai, Yavapai Tolkapaya = Western, Yavape = Northeastern (Prescott, Verde Valley Yavpe), Kewevkapaya = Southeastern*

Paipai = Akwa'ala

Kiliwa

Cochimí*: *Borjeño, Ignacieño, Cadegomeño, Laimón, Monqui-Didiu*

The Yuman languages are spoken along the Colorado river in San Diego and Imperial counties in southern California, in western Arizona, and in northern Sonora and Baja California. The distinction between languages and dialects in this family is complex, partly because of contact and merger, partly because of dialect continua, partly because of established terminology. Langdon 1990 points out that the varieties of Diegueño form a dialect continuum, but show greater diversity than the varieties of River Yuman, for example. It is not yet clear whether San José de la Zorra, Neji, and Ha'a should be considered dialects of Tiipay or a fourth Diegueño language. Havasupai and Hualapai have long been known by separate names but are very similar and close to a third dialect, Yavapai. Kiliwa is the most divergent of the four branches. The Yuman languages are related as a group to a set of dialects or languages termed Cochimí, spoken in Baja California until the early 19th century (Troike 1976, Mixco 1978, 1979). Yuman was recognized as a family in Powell 1891 and classified as Hokan in Dixon and Kroeber 1913. A survey of the locations, relationships, and current status of the languages and dialects is in Kendall 1983.

Most of the languages are still spoken, and at least Cocopa, Havasupai, Hualapai,

and Paipai are still being learned by children. There are few speakers of 'Iipay, but perhaps 40-50 of Kumeyaay, 100 of Tiipay, 500-600 of Cocopa, and 100-200 of Paipai. (U.S. census figures from 1990 list more.) Kendall (1983) reported that in 1980 there were under 700 speakers of Yuma, under 300 of Maricopa, around 1000 of Walapai, 500 of Havasupai, and 100-150 of Yavapai. Munro (1976a) reported a few hundred speakers of Mojave, and Mixco (1985) around a dozen fluent speakers of Kiliwa.

Yuman people were encountered by Spanish explorers in 1540, but apart from wordlists their languages were little documented until the 20th century. The last several decades saw much activity, especially by Margaret Langdon and her students.

For the Diegueño languages, principal published work includes a Mesa Grande reference grammar (Langdon 1970), a teaching grammar (Couro & Langdon 1975), a dictionary (Couro & Hutcheson 1973), a discussion of nominals (Gorbet 1976), of oratory and narrative (Langdon & Hymes 1997), and a Santa Ysabel text (Langdon 1976a). For Kumeyaay there is an Iñaja text (Jacobs 1976b). For Tiipay, there is a Jamul grammar (Miller 1990) and La Huerta texts (Hinton 1976, 1978).

For Cocopa there is a grammar (Crawford 1966), a dictionary (Crawford 1989), and texts (Crawford 1983, Cocopah 1976). Phonology is described in Bendixen 1980, classificatory verbs in Crawford 1998, and desideratives in Gorbet 1998.

Documentation of the River languages includes a Yuma grammar (Halpern 1946a,b, 1947) and texts (Halpern 1976, Emerson & Halpern 1978); a Maricopa grammar (Gordon 1986) and texts (Spier 1946, Sunn & Harwell 1976); and a Mojave grammar (Munro 1976a) and texts (Crawford 1976a, 1978, Munro 1976b).

For the Pai languages there are grammatical descriptions of Havasupai (Seiden 1963, Kozlowski 1972, Hinton 1984), texts (Spier 1924b, 1946, Kozlowski 1976), a vocabulary (Spier 1946), and songs (Hinton 1984); grammars of Hualapai (Redden 1966, 1976, Watahomigie, Bender, and Yamamoto 1982) and texts (Winter 1966, Winter & Butcher 1976); a grammar of Tolkapaya Yavapai (Hardy 1979), description of demonstratives (Hardy 1998), and text (Munro 1978a); a grammar of Verde Valley Yavapai (Kendall 1976) and texts (Kendall & Sloane 1976, Kendall 1978); and a grammar and dictionary of Prescott Yavapai (Shaterian 1983). Joël published a Paipai grammar (1966) and text (1976), and comparison with Arizona Pai (1998).

Finally for Kiliwa, Mixco has produced a grammar (1971), dictionary (1985) and texts (1976, 1983), and discussion of topic continuity and particles (1998).

A wealth of articles on the history and structure of Yuman languages can be found in the proceedings of the Hokan Penutian workshops (*SIUOCP*), the *JC(GB)APL*, and in Langdon & Silver eds. 1976. Numerous additional articles are cited in the above works. A bibliography of works on Yuman languages through 1995 is in Langdon 1996. Unless otherwise noted examples here are Jamul from Miller 1990 and Maricopa from Gordon 1986. Original transcription used in all sources is retained.

The languages have similar but not identical phonological inventories. There is generally a single series of obstruents in bilabial, dental, alveolar, palatal, palatalized velar, velar, labiovelar, and uvular positions, and glottal stop. The dental-alveolar distinction is an innovation within Diegueño, Cocopa, and Yuma. Among the fricatives are *β* (from non-root-inital **p* in River and Pai) *s* (*θ* in Upland Yuman and Mojave), *ʂ*, *x* or *h*, and *xʷ* or *hʷ*. Resonants include *m*, *n*, *nʸ*, *l*, *ɬ* or *ɬʸ*, *r*, *y* (corresponding to *ð* root-initially in River), and *w* (*β* root-initially in River). The original vowel system consisted of long and short *i*, *a*, and *u*, but the River and Pai languages have added mid-vowels. Schwas are epenthesized under nearly specifiable conditions to break consonant clusters. Stress falls on the vowel of the original (*C*)V(C) root, the final stem vowel. Shaterian 1983 notes distinctive pitch on stressed syllables in Yavapai. Consonants may be altered according to their position within the word. Miller 1990 reports that in Jamul, root-initial consonants are prone to fortition, while root-final, prefixal, and suffixal consonants are increasingly prone to lenition. There is some metathesis; in Mesa Grande it involves coronals and *x* and produces variants: *kəʧxi·/ʧəkxi·* 'gopher', *xəcuɾ/cəxuɾ* 'it is cold' (Langdon 1970: 75, 1976b).

An interesting feature traceable to Proto-Yuman is sound symbolism involving both consonants and vowels (Langdon 1971). Ablaut of coronal root consonants (usually resonants, sometimes spirants, more rarely stops) differentiates degrees of size and intensity: Campo *łapłap* 'to be (large and) flat', *laplap* 'to be (small and) flat'; *ʔəɬʸa·* 'male cousin', *ʔəlʸa·* 'female cousin'; *ʂəna·* 'to pinch', *ʂənʸa·* 'to touch'. Vocalic ablaut, historically an alternation in length but in the daughter languages shifts in quality and/or quantity, serves various derivational functions, often with affixation (Langdon 1989). Both the consonant and vocalic ablaut present challenges for reconstruction.

Noun stems or themes may consist of a simple noun root (Jamul *aa* 'mouth'), a noun root plus prefix (*iichash* 'heart', *iipuk* 'neck'; *llyka'máwa* 'grasshopper', *llytut* 'spider'), a verb root plus nominalizing affix (*a'-ttim* 'NOMINALIZER-shoot' = 'gun'), or a compound (*aa-lemis* 'mouth-hair' > *alemi* 'beard'). Number is not distinguished on nouns, apart from some nouns referring to humans and some nominals derived from plural verbs. Pronominal prefixes specify possessors: *m-shally* 'your hand'. The prefixes are added directly to stems representing inalienable possessions, which include most body parts, some kinsmen, language, name, tribe, and certain articles of clothing (skirt, pants, eyeglasses but not jacket, hat, or shirt). A prefix *ny-* precedes stems referring to alienable possessions: *m-ny-wa* 'your house'. Demonstrative suffixes can follow the stem. Case enclitics are optionally added to the entire nominal constituent: *kapii nyu-pe=lly* 'church old-DEMONSTRATIVE=in 'in the old church'. Marked cases are nominative, instrumental/comitative/ablative, locative ('at/on'), allative 'toward', illative/inessive (motion into or position inside), and vocative. The accusative is unmarked in most of the languages, a typologically unusual feature.

Verbal morphology is more complex. Primary stems or themes may consist of a root alone or a root augmented by reduplication, affixation, and/or traces of earlier incorporation. Reduplication signals iteration and distribution: Jamul *chexelxul* 'gargle', *saksak-i* 'be itchy'. Large sets of theme-forming prefixes have been isolated. Some recur frequently with clearly discernible meanings, similar to the instrumental-causative prefixes in other Hokan languages, while others are more elusive. The prefix *ch-*, in Jamul 'gargle' above, for example, can indicate repetitive motion: *chuukar* 'shake, shiver', *chuukatt* 'cut into squares', *chuupull* 'boil'. Others reported by Miller indicate long motion (*aatuk* 'pour', *aawil* 'wag tail'), actions with the mouth (*chemaa* 'taste', *chexwiiw* 'whistle', *chuutuk* 'kiss'), with the feet (*kuuttu* 'kick', *kuuwi* 'chase'), antisocial qualities (*xelli'ish* 'not share', *mell'is* 'be stingy'), physical or social contact (*meyuy* 'relate, be sociable', *meyally* 'make tortillas').

All of the languages show a variety of causative formations, involving prefixation, vocalic ablaut, suffixation, or, quite often, a combination of these processes. Two prefixes, ablaut, and a suffix can be seen in the Jamul causative *melyyay* 'be ugly', *te-mely-aa-yaáy-a* 'make ugly'. Plurality is not obligatorily marked on nouns or verbs, but the languages show large numbers of plural verb formations. Some verb roots have number as part of their basic meanings: *pam* '(one) to arrive', *aayip* '(several) to arrive'. Some verbs have no plural forms, but others have several, pluralizing various aspects of the event. The plural markers show a striking resemblance to many of the causative markers. An example of multiple plurals in Hualapai is given in Watahomigie, Bender, & Yamamoto 1982: 327, cited in Langdon: *ji'a:lk* 'one to look over one thing', *ji'a:ljk* 'two/few to look over one thing', *jij'a:lk* 'one to look over many things', *jij'a:ljk* 'many to look over one thing', *jij'a:lvk* 'many to look over many things', *ji'a:l-ji'a:lk* 'to keep looking over one/many'.

Verb stems may also consist of a verb or noun root plus verbalizing suffix: Yuma *ʔaxá-y* 'water-VERBALIZER' = 'to be damp' (Halpern 1946a). Other derivational suffixes include directionals (Jamul *chepa-k* 'exit-toward' = 'emerge, come out', *chepa-m* 'exit-away' = 'go out'), and a mediopassive (Maricopa *'-shnaly-k* 'I-lose-REALIS' = 'I lost (it)', *chnaly-v-k* 'lose-MEDIOPASSIVE-REALIS = '(it) is lost'). The River languages contain a benefactive (Maricopa *tra-k* 'light.fire-REALIS' = '(he) lit a fire', *ny-tra-y-k* '3/1-light.fire-BENEFACTIVE-REALIS' = 'he lit a fire for me'). There are traces of incorporation of body part nouns: Jamul *yay-xan* 'heart-be.good' = 'be happy'.

Verbal inflection can be elaborate. Pronominal prefixes specify the core arguments of verbs. In intransitives, first person, second person, imperative second person, and third person are distinguished, although in the River, Pai, and Kiliwa languages third person is not overtly marked, and in the California-Delta languages, it is marked only in some phonological contexts: Jamul *'-amp* 'I walked', *m-amp* 'you walked', *k-amp* 'walk!', *w-amp* 'she walked'. In transitive verbs, prefixes specify subject-object

combinations: Jamul *ny-any* 'I accompany you', *'-any* 'I accompany her', *nyem-any* 'you accompany me', *m-any* 'you accompany her', *nyek'-any* 'accompany me!', *nye'-any* 'she accompanies me', *m-any* 'she accompanies you', *w-any* 'she accompanies her'. Number is not distinguished within the pronominal prefixes, but a separate plural object prefix may precede them: Maricopa *nyi-ny-yuu-k* 'PL-1/2-see-REALIS 'I saw you all'. In the River languages, case enclitics have sometimes been reanalyzed as verbal proclitics: Maricopa *lames=ly 'shvaw-k* 'table=in I-put-REALIS' = 'I put it on the table'; *mat ily=k=shvaw-k* 'earth in=IMPERATIVE-put-REALIS' = 'Plant it in the ground!'

Various adverbial suffixes may follow the verb stem with meanings like 'again', 'along', 'too', 'very', 'first', 'yet', 'this time', and general emphasis. Final suffixes on main clauses include aspectual and mood markers such as indicative realis, stative or completive, incompletive, irrealis, desiderative, possible future, hortatory, evidentials, optative, dubitative, and interrogative.

Other verbal affixes form subordinate clauses. A prefix *nʸa-* produces 'when' or 'if' clauses: Jamul *nya-yul-km nyapuum m-si-x* 'when-be.cool-IRREALIS.DIFFERENT.SUBJECT then 2-drink-IRREALIS' = 'When it is cool, then you can drink it.' Subordinating suffixes serve similar functions, contributing meanings like 'although', 'while', and 'if'. Especially interesting are the suffixes known as switch-reference markers: **-k* generally appears on dependent clauses with the same subject as the main clause, while **-m* appears on those with a different subject. (Switch-reference is discussed in the grammars and in Kendall 1975, Winter 1976, Slater 1977, Langdon 1978b.)

Arising out of such sequences of clauses is an auxiliary system, based on morphemes that occur elsewhere as independent verbs with meanings like 'sit', 'stand', 'lie', 'say', 'go around', 'be', 'do', etc. Constructions based on verbs of position or motion generally characterize ongoing states or events, those with 'say' verbal behavior, those with 'be' intransitive events or states, and those with 'do' transitive actions. The auxiliaries immediately follow the main verb with no intonation break and bear subject prefixes. In all but Diegueño, what is translated as the main verb shows the same subject suffix: Mojave *hatcoq ʔ-kaʔa·-k ʔ-aʔwi··-m* 'dog I-kick-SAME.SUBJECT 1-do-REALIS' = 'I kicked the dog' (Munro cited in Langdon 1978b). Interestingly, the use of the auxiliaries is not obligatory, and sometimes reflects the speaker's attitude on the effect of the event (Akira Yamamoto and Kumiko Ichihashi p.c. 1991). Langdon 1978b contains a detailed discussion of the auxiliary constructions.

Sentences in Yuman languages may consist of a single inflected verb or a verb plus one or more nominals. Nominals may consist of a noun, a noun phrase, or a nominalized clause. Nominalized clauses are often formed by relativization. If the head of a relative clause functions as the subject of the relative clause, a prefix **kʷ-* appears on the relative verb: Maricopa *'iipaa ny-kw-tshqam* 'man 3/1-RELATIVE-slap.DIST' = 'the man who beat me'. The whole nominalized clause can bear a case

enclitic signalling its role in the main clause: *['iipaa ny-kw-tshqam]=sh shmaa-m* = '[man 3/1-RELATIVE-slap.DIST] = SUBJECT sleep-REALIS' = 'The man who beat me is asleep.' If the head functions as an oblique in the relative clause, a different relative prefix is used in some languages, no prefix in others: Maricopa *[kwnho mvar m-uuchash]=sh nyikor-k* '[basket flour 2-put.NM]=SUBJECT old-REALIS' = 'The basket you keep the flour in is old.' Relative clauses may serve any syntactic role in the main clause. Clauses are also frequently nominalized by the addition of a demonstrative, especially those referring to a fact: Jamul *kafe sity-pu nemuuhay* 'coffee drink.NM-DEM like' = 'He likes my drinking coffee' (Richard Epstein p.c. 1990). Often a special form of the verb stem appears in nominalized clauses, as in 'put' and 'drink' here.

Some of these structures can be seen in the excerpt below from a Jamul narrative told by Gennie Walker (Miller 1990: 228). Line 2 has two relative clauses, the first with a subjective head. The nominative case enclitic *=ch* appears in 2, 4, and 5. The same subject suffix appears in 4 and 6. A subordinating prefix clause is in 6. Plural verbs are throughout. (SUBJ.REL is a relative clause functioning as subject.)

nyakur-lly
past-in
'Long ago

tiipay	*nyakur*	*k-nyewaay-pe=ch*	*kwak*	*sa'áya*	*nyechuuwiich*
people	in.past	SUBJ.REL-be.located.PL-DEM=NOM	meat	CAUS-dry	have.PL

people who lived back then had meat which had been dried;

w-saw	*t+nyeway*
3-eat.PL	t+be.located.PL

they would eat it.

kur'ak	*nemuus-pe=ch*	*w-aa-ch*	*kwak*	*kw-atay*	*uukwii*
old.man	great.uncle-DEM=NOM	3-go-SS	meat	SUBJ.REL-big.NOM	buy

My great-uncle would go buy a big piece of meat

nya-chshaa-k	*kwakuy*	*nemuus-pe-ch*
when-bring-towards	old.woman	great.aunt-DEMONSTRATIVE-NOMINATIVE

and when he brought it [home], my great aunt,

kwak-pu	*nya-u-yaw-ch*	*achkatt*
meat-DEMONSTRATIVE	when-3-pick.up-SAME.SUBJECT	cut.PL

she took the meat and she cut it up.'

Zuni = Zuñi

Zuni (earlier Spanish Zuñi) is spoken by most of the 8000 residents of Zuni Pueblo in western New Mexico, including many children. So far as is known, the language has no close relatives. Possibilities of remote relationships to various stocks have been investigated, including Aztec-Tanoan (Sapir 1929) and Penutian (Swadesh 1954, 1956, 1967, Newman 1964, Hamp 1975). There is evidence of contact with Uto-Aztecan, but Zuni is generally considered a language isolate.

Grammars are in Bunzel 1934 and Newman 1965, 1996. Some points raised in Newman's 1965 grammar are discussed in Davis 1966a, Walker 1966, 1983, Newman 1967a, and Tedlock 1969. Bunzel also published origin myths (1932a) and poetry (1932b). A dictionary is in Newman 1958. Additional discussion of phonology is in Michaels 1971, Walker 1972, Shaul 1982c, and Yumitani 1987. Grammatical classes are discussed in Walker 1964, 1966, and incorporation in Miner 1986. Sacred and slang vocabulary are described in Newman 1955 and Zuni equivalents to the English 'to be' in Newman 1968. Discussions of syntax are in Granberry 1967, Stout 1972, 1973 (on transitivity), and Nichols 1990 (on switch-reference) and 1998 (on grammatical relations). An earlier auxiliary system is reconstructed in Nichols 1993. Kinship and social relations are analyzed in Watts 1992 and poetics in Tedlock 1972, 1983.

Newman (1965, 1996) identifies 16 consonants: stops *p, t, c, č, k, kʷ, ʔ*, fricatives *s, š, ɬ, h*, and resonants *m, n, l, w, y*. Oral stops followed by *ʔ* yield ejectives. There are 10 vowels: *i, e, a, o, u* and *i·, e·, a·, o·, u·*. Short vowels are typically devoiced utterance-finally; *n* and *ʔ* are deleted in the same position. The final vowel or vowel + glottal of a polysyllabic word is deleted before a word beginning with *h* or *ʔ*: *kʷʔalaši* 'crow', *kʷʔalaš hatiya·ka* 'Crow listened'. Stress is initial.

Word classes are distinguished on the basis of their inflectional suffixes. Verbs are inflected for tense, mode, or subordination; nouns for number; and pronouns for number and case. Particles are uninflected.

Verb stems fall into ten inflectional classes according to the shapes of their inflectional endings. Each stem has two basic forms, one used with one set of inflections including the present, the other with another set including the past.

Among the verbal inflections are six tense-mode suffixes. One is a simple past tense: *ʔi·mu-ka* 'sit-PAST' = 'he sat down'. Another forms imperatives and presents: *maʔ pen-eʔ* 'well talk-PRESENT' = 'Well talk!'; *hop toʔ kʔakʷe-ye* 'where you dwell-PRESENT' = 'Where do you live?'. A third forms futures and (non-past) conditionals: *we-ʔanna* 'become.sick-IRREALIS' = 'he will be sick, he would be sick (if he hadn't taken medicine)'. A fourth occurs in negative futures and (non-past) conditionals: *kʷaʔ ʔitonap-šukʷa* 'not eat.PL-NEGATIVE.FUTURE' = 'they will not eat it'. Past conditionals are marked by the irrealis *-ʔanna* plus another element *-nka* to yield

-ʔannanka: *čun-ʔannanka* 'quit-PAST.CONDITIONAL' = 'He should have quit.' A negative past conditional is formed with a suffix composed of the negative irrealis plus *-ʔka* plus the past: *kʷaʔ tom hoʔ ʔitokʔa-ššukʷaʔka* 'not you I feed-NEGATIVE.PAST.CONDITIONAL' = 'I would not have fed you [if I hadn't had plenty of food].'

Two other verbal inflections indicate pure mode. The hortatory occurs without a subject pronoun and expresses a command or exhortation 'let's': *łu·ʔ kʷayi-šę* 'go get.out-HORTATORY' = 'Go on and get out'; *ʔota-ʔše* 'dance-HORTATORY' = 'Let's dance.' The permissive, which does occur with an overt subject, expresses a polite command, request, or petition: *kʔeccanišši toʔ ʔa·-tu* 'May you go with joy' (a formal greeting); *hoʔ ʔayna-ttu* 'I kill-PERMISSIVE' = 'Let me kill it.'

The other eight verbal inflections are subordinators. The resultative indicates purpose: *ʔayna-kkan ʔika* 'kill-RESULTATIVE came' = 'He came to kill it.' The adverbial indicates manner: *tešlan-nišši? peka* 'afraid-ADVERBIAL-spoke' = 'He spoke fearfully.' The adjunctive creates modifying clauses: *yatonil hoł suski lesne-n ʔallukka* 'daily perhaps Coyote do.this-ADJUNCTIVE moved.about' = 'All day long, it seems, Coyote went about doing this.' The contemporaneous marks a simultaneous event: *ʔa·ne-q· čuneka* 'go-CONTEMPORANEOUS stopped' = 'He stopped going.' The same-subject suffix marks subordinate clauses with the same subject as the matrix verb: *pilak-nan kʷʔalaši pow ʔułłakʷin ʔa·ka* 'stand-SAME.SUBJECT crow sitting near.place went' = 'Getting up, he went near the place where Crow was sitting.' The different-subject suffix marks a contrast in subjects: *ʔiyuteʔčinaša· pow ʔułła-ʔap suski ʔokʷika* 'resting sitting near.DIFFERENT SUBJECT Coyote awoke' = 'While he (Crow) was sitting near it, Coyote awoke.' The past agentive serves as a nominalizer: *ʔutte-kowaʔ* 'bite-PAST.AGENTIVE' = 'the one who bit it, that which was bitten'. The modificative, with the particle *ʔona* is a nominalizer: *we-ʔan ʔona* 'sick-MODIFICATIVE one' = 'the one who is sick'.

Verb stems may be internally complex, built up by various derivational prefixes and suffixes. Prefixes closest to the root include a plural absolutive, an inchoative, and a 'terrestrial'. The plural quantifies an intransitive subject or transitive object: *tet-toma·yo-ʔanna* PLURAL.SUBJECT-forget-FUTURE 'they will forget'. The inchoative adds the meaning 'become': *y-aʔa-ʔka* 'INCHOATIVE-be.a.hole-PAST 'a hole developed'. The terrestrial shows involvement with the earth: *te-kʔina* 'TERRESTRIAL-be.wet' = 'The ground is wet'. Preceding these prefixes may be the indeterminate 'somewhat': *yu-cʔikʔo* 'INDETERMINATE-be.bent' = 'It is slightly bent'. Beyond these may be an indirective (applicative): *ʔah-heye-ka* INDIRECTIVE-defecate-PAST 'he defecated on it'. Before this may be the reflexive: *y-apcʔi-ka* 'REFLEXIVE-cut-PAST = 'he cut himself'. In the outermost position may be the reciprocal or another plural. The reciprocal can be seen in *ʔi·y-an-šema-nap-ka* 'RECIPROCAL-INDIRECTIVE-ask-PLURAL. SUBJECT-PAST' = 'they asked each other'. The plural is for absolutives: *ʔa·w-icʔu-ma-ti-ka* 'PL-cold-

PERCEPTIVE-INCHOATIVE-PAST' = 'they were getting cold'; *ʔa·w-i-piya-··-nan ʔi·muka* 'PLURAL.OBJECT-REFLEXIVE-hold.by.hand-CAUSATIVE-SAME.SUBJECT.SUBORDINATsat' = 'After shaking hands with them, he sat down.'

Following the root may be a negative suffix: *kʷaʔ hiš toʔ ʔošokʷ-ʔamme* 'not very you have.head-NEGATIVE' = 'you do not have much of a head' = 'You are foolish.' Also in this position is what Newman terms the punctiliar, added to certain verbs before the inchoative or stative: *toʔ ʔič-ʔʔa-na* 'you lazy-PUNCTILIAR-STATIVE' = 'You are lazy.' Second may be one of four aspectual suffixes, all occurring with past stems: a repetitive, an inchoative, and two conversive causatives, which reverse a state: *ʔanimo-š-ka* 'be.in.place-REPETITIVE.CONVERSIVE.CAUSATIVE-PAST' = 'he took it apart'. Next may be a basic causative: *kʔokši-kkʔa* 'be.good-CAUSATIVE' = 'Make it good!' Following the causative may be a stative or continuative: *hom kʔi-kʔa-na-kʔanna* 'me become.wet-CAUSATIVE-STATIVE-FUTURE' = 'He will get me wet.'; *toy-ę·-nap-ka* 'plant-CONTINUATIVE-PL.SUBJECT-PAST' = 'they were planting'. In the fifth position is the pluralizer for transitive subjects, as in the last example. Sixth is another negative: *kop leyʔap kʷaʔ homʔan toʔ tena-··-naʔma* = 'what happening not for.me you music-CAUSATIVE-NEGATIVE' = 'What's the matter that you aren't singing for me?'

Verb stems may show a loose kind of incorporation, whereby a noun is brought into the verbal complex. Verbal prefixes precede the noun: *ʔi-we taku-ka* 'REFLEXIVE-fur wear.around.neck-PAST' = 'He wore the fur pieces around his neck.'

Disyllable roots referring to kinds of noises may show reduplication. Reduplication of the first CV serves as a repetitive: *towto-ʔa* 'there are pounding noises' (*towo* 'make a rumbling sound', *-ʔa* PRESENT). Reduplication of the last CV indicates continuous repetitions: *towowo-ti* 'it's thundering' (*-ti* INCHOATIVE).

Nouns are inflected only for number: *pasi-nne* 'sleeve-SG' = 'sleeve', *pasi-·we* 'sleeve-PL' = 'sleeves'; *sa-ʔleʔ* 'dish-SG' = 'dish', *sa-weʔ* 'dish-PL' = 'dish-es'. Like verbs they fall into inflectional classes. A few nouns referring to masses and abstractions occur only in the plural: *kʔaweʔ* 'water', *cema·weʔ* 'thought(s)'.

Noun stems may be compounds consisting of NOUN+NOUN or NOUN+VERB: *ma-kučči-nne* 'salt-pants-SG' = 'blue jeans'; *no-čapi-··weʔ* 'bean-burn-PL' = 'coffee'. A set of suffixes derive noun (or verb) stems referring to collectives, certain spatial groupings of objects. They include *-limo* 'dispersed objects', *-łpo* 'objects in an arrangement (stack, bundle)', *-pała* 'wrapped objects', *-la* 'objects in a shallow container', *-pa* 'objects in a deep container'. The suffix *-la* appears in *lu-ł-ʔe* 'ash-object.in.shallow.container-SG' = 'ashes in an ashtray'.

Personal pronouns are independent words: *toʔnaʔ hoʔ ʔil ʔ-a·n-uwa* '2DU.OBJECT 1SG.SUBJECT with PL.OBJECT-run.away-FUTURE' = 'I will take you two with me.' Three persons are distinguished, three cases (subject, object, possessive), and three numbers, though dual and plural are distinguished only in third persons and in possessives.

Third person singular and plural subjects are unmarked, and third person object pronouns are used only for emphasis.

Particles, which Newman estimates to constitute a third of the lexicon, are by definition uninflected. They serve as nominals (kinship terms, names of animals, indefinites), modifiers ('chubby', 'suddenly'), demonstratives, numerals, and conjunctions.

A set of enclitics can follow words of any class. They include the interrogative *=ši*, *=ʔte* 'in spite of', directional *=kʷin* 'toward', and locative *=ʔan* 'at'.

Constituent order is basically SOV, though a verb alone may constitute a sentence. Complements generally precede main clauses. A sample of the language can be seen in the excerpt below from Bunzel 1934: 399-400. Her transcription and word-by-word glossing are retained.

tem	*hoʔ*	*tʔopin·te*	*tcaʔl*	*il·ikä.*
still	I	only one	child	had

'Then I had only one child . . .

ma·kʔona	*ankʔetsana.*
young woman the one	in her he delighted

He was in love with a young married woman.

uhsona	*ma·ki*	*kwa*	*antecemanam·e.*	*ikaneʔa*
that one	young woman	not	does not want him	he was angry

This young woman did not want him. He was angry.

ma·ki	*samu*	*weʔa.*	*acenʔiha.*
young woman	ugly	is sick	she is about to die

Then the woman became dangerously ill. She was about to die.

an	*eʔnin·e*	*pipto·*	*le·*	*uhsona*	*antehakikä*
her	belt	fringes	this much	that one	from her he cut off

He had cut off a little piece from the fringe of her belt.

ak·ä	*halicotikä*
Therefore	she went crazy.

Therefore she went crazy.'

7.2 Pidgins, creoles, and mixed languages

Chinook Jargon

Chinook Jargon is a pidgin that originated along the Columbia River and was eventually spoken from the northern border of California to the Alaska panhandle, and from the Pacific coast into western Montana. It was first recorded at the end of the 18th century before it was identified as a pidgin. Over the course of the 19th century it spread until there were an estimated 100,000 speakers, with over 100 mother tongues, most from the language families indigenous to the region but also English, French, Hawaiian, and Chinese. It was used both among Native peoples and with European traders, settlers, missionaries, loggers, whalers, and others. Boas used it as a contact language with speakers of Tillamook, Clatsop, Chinook proper, Lower Chehalis, Songish, Kwakiutl, Bella Bella, Tsimshian, and Haida (1933). During the 20th century it has been largely replaced as a lingua franca by English, but there are still people who can and occasionally do use it (Barbara Harris p.c. 1992).

There is a considerable literature on Chinook Jargon, much of it popular books, wordlists, and articles. Several extensive bibliographies exist. Pilling 1893 contains references to 19th-century works, Johnson 1978 a classification of over 100 dictionaries and wordlists, and Harris & Giles 1991 an annotated listing of the dictionaries, newspaper and journal articles, letters, and tape-recordings they have collected at the University of Victoria. Additional references are in Grant 1945, Samarin 1986, and other works cited here. Documentation is of several types. Historical accounts contain travelers' attempts at representing what they heard in English orthography. Missionaries and other Europeans wrote up materials in their own version of the Chinook Jargon. Finally, Chinook Jargon has been recorded from speakers of various Northwest Coast languages by linguists, among them Hale (1841), Boas (1933), Jacobs (1932, 1936), Powell (1990b), and Zenk (1982, 1984a, 1991). Boas (1933) notes that the Jargon recorded by Jacobs from a Clackamas speaker differs from that he had heard from others, showing strong influence from her first language and fewer pidgin features.

There is evidence that Chinook Jargon may have been momentarily creolized, that is, learned as a native language, in the multilingual communities formed in the late 19th century like Grand Ronde and Siletz in Oregon (Hale 1890: 10, Hymes & Hymes 1972, Zenk 1984b, 1988), but its speakers were probably always multilingual.

Several issues remain controversial. A primary question is its origin. Under one hypothesis, Chinook Jargon originated with the arrival of Europeans and other visitors (Samarin 1986, 1988, 1996). This view received added support from the monogenesis theory, no longer generally held, that all pidgins are traceable to a single

source, Portuguese sailors who carried their jargon all over the world. There is of course no direct evidence of pre-contact use of the Jargon. An alternative hypothesis is that the Jargon was established before contact. Hymes 1980 points out that conditions in the area had long been conducive to the development of a pidgin: intense multitribal contact, trade, slavery, and exogamy. Thomason 1983 shows that its structure suggests that it was crystalized before European contact. The usual pidgin represents a linguistic compromise, from which highly marked features not shared by all contributing languages are absent. Chinook Jargon as spoken by Indians contains many marked phonological features common to languages indigenous to the Northwest, but absent from English or French, including ejectives, lateral fricatives and affricates, a velar/uvular distinction, rounded back consonants, postvocalic velar or uvular fricatives, and certain consonant clusters. Indians could thus not have learned it from Europeans. A third possibility is that development of the Jargon was stimulated by European contact but carried out by indigenous peoples, then later enriched with European loans. Chamberlain (1912: 275 cited in Silverstein 1972: 617) counted the changing proportions of words from various source languages and identified 41 words from English in 1841 but 570 by 1894.

A second issue is the nature of Chinook Jargon itself. Silverstein 1972 proposes that it is not a pidgin in the strictest sense, in that it has no phonology or grammar of its own. It is only a lexicon that speakers use with simplified versions of their various native grammars, from which marked (cross-linguistically unusual) features have been eliminated. Thomason 1983 shows that in fact there was an independent target grammar, although individual speakers did not necessarily always succeed in conforming to it. She points out that native speakers of Twana, Snoqualmie, Saanich, Nootka, Tsimshian, Upper Coquille, Santiam, and Chehalis all produced Chinook Jargon that contained marked features not present in their own mother tongues.

Chinook Jargon shows numerous features typical of pidgins. There is considerable phonological variation, relatable to the native tongues of its speakers (Zenk 1991). There is nevertheless a specific consonant inventory, analyzed by Kaufman (cited in Thomason 1983, Thomason & Kaufman 1988) as follows: plain voiceless stops *p, t, ts, tš, k, kʷ, q, qʷ, ʔ;* ejectives *p', t', ƛ', ts', k', kʷ', q', qʷ';* voiced *b, d, g;* fricatives *ɬ, s, š, x, xʷ, χ, χʷ;* and resonants *m, n, (r), l, w,* and *y*. Vowels are *i, e, a, ə, o,* and *u*. Most Europeans did not distinguish marked consonants like ejectives or uvulars, but there is evidence of a systematic rendering of laterals *ɬ* and *ƛ'* as *kl-* initially, and *-tl* medially and finally (Hale 1846, Thomason 1983). Stress is most often initial.

The lexicon is drawn primarily from Lower Chinook, Nootka, Chehalis, English, and French, with additional loanwords from Cree, Hawaiian, and other languages.

Several features can be seen in a tale told by a Tsimshian speaker, a passage from which appears below (Boas 1933). Uvulars *q* and *χ* are distinguished from *k* and *x̲*.

Initial stress can be seen in French loans *lámotai* 'the mountain', *lə́muto* 'mountain sheep'. As would be expected, the nasalization of vowels is not preserved, nor the [ñ].

Morphological structure is minimal. There is no gender or case: *yáka* means 'he', 'she', 'it', 'him', 'her', 'his', 'her', 'its'. Nouns are seldom inflected for number: *man* 'man', 'men'. There are no tense, aspect, or mood affixes. *kʌ́mtʌks* is translated 'know', 'knew', and 'to know'. *mámʌk* is used both as a verb 'do', 'make' (*mámʌk lámətsʌn* 'made medicine'), and as a causative: *mámʌk kʌ́mtʌks* 'made know' = 'taught', 'told'; *mámʌk kapét* 'make finish' = 'to finish'. *tcá·ko* is used as a verb 'come', 'came', 'come!' and inchoative: *yáka tcá·ko ɬo·c* 'he came (to be) well'.

Words show broad ranges of meanings. In this text the word *ɬap* 'find' is used in phrases *ɬap lə́muto* 'find a mountain sheep', *ɬap mas'ɔ́l* 'hit (by shooting) the White Bear', *ɬap lámotai* 'arrive at the mountain', *ɬap é·lehi* 'reached the ground', and *ɬap ikt man* 'met a man'. A preposition *kopa* is general in meaning: *yáka wá·wa kopa ó·kɔk man* 'he said to that man'; *ípsut kópa kaní·m* 'hiding in canoes'.

Negation is expressed by a separate word before the negated constituent (*hélo télχ̲əm* 'no people') clause-initially (*hé·lo máika kwá·'s* 'not you afraid' = 'Don't be afraid', or occasionally preverbally. A question particle *na* is optional. Clauses are juxtaposed but not embedded: *wɛxt ɬáska wá·wa, máika kʌ́mtʌks wihalíat mákamʌk man* 'Also, they said, you know the great dancer eats men.' A discussion of narrative structure can be found in Hymes & Zenk 1987.

In the Chinookan languages of the region, verbs contain pronominal prefixes specifying their core arguments, whether additional coreferent nominal adjuncts are present or not. In Chinook Jargon, verbs are often accompanied by free pronouns, even with separate nominals: *télχ̲əm ɬáska ɯskʌm yáka* 'the people they took him'.

á·nqate	*hélo*	*télχ̲əm*	*kʌmtʌks*	*íkta*	*wihalaí't.*
Long ago	no	people	knew what	the	great dance.

ikt	*man*	*yáka*	*kú·li*	*kopa*	*lámotai*	*yáka*	*tiki*	*ɬap*	*lə́muto.*
One	man	he	went	to	the mountain	he	wished	to find	mt sheep.

tənás	*lé·le*	*yáka*	*kú·li*	*pe*	*yáka*	*ɬap*	*ikta,*	*mas'ɔ́l.*
A little	long	he	went	and	he	found	something	a white bear.

yáka	*ma·c*	*bow*	*pe*	*káka*	*ɬap*	*mas'ɔ́l.*
He	threw (shot)	bow (arrow)	and	he	found (hit)	the white bear.

ɬáska	*kú·li*	*pe*	*man*	*yáka*	*kú·li*	*kímta.*
They	went	and	the man	he	went	after.

Delaware Jargon = Pidgin Delaware*

A pidginized form of Unami Delaware, developed in the 1620s, was used between the Delaware and Dutch, Swedish, and English colonists. The Delaware speak two closely related Eastern Algonquian languages, Unami and Munsee. Unami was spoken in colonial times in the Delaware River Valley and New Jersey, and Munsee to the north in the lower Hudson River Valley, on western Long Island, in the upper Delaware River Valley, and northern New Jersey. The fullest discussion of the pidgin is in Goddard 1997, with additional work in Goddard 1971, 1995 and Thomason 1980.

The earliest mention of it is by a Dutch minister Jonas Michaëlius in 1628, who recognized that it was not true Delaware, commenting that the Delaware:

> rather design to conceal their language from us than to properly communicate it, except in things which happen in daily trade; saying that it is sufficient for us to understand them in that; and then they speak only half sentences, shortened words . . . and all things which have only a rude resemblance to each other, they frequently call by the same name. (Michaëlius 1628 in Jameson 1909: 128 cited in Thomason & Kaufman 1988: 175)

Sources of vocabulary and phrases are de Laet 1633, Campanius 1696, Lindeström 1923, Penn 1683, the anonymous author of the 1684/1686 'Indian Interpreter', Thomas 1698, Pastorius 1700, and Denny 1785. Not all scribes realized that the language was not standard Delaware. The two most important sources are Campanius (C) and the Indian Interpreter (II). Campanius, a Lutheran missionary in New Sweden from 1642 to 1648, translated a catechism into the pidgin and appended a vocabulary. The 'Indian Interpreter' manuscript was found in the Salem Town Records book and published in Nelson 1894 and (with errors) in Prince 1912.

Goddard 1997 shows that all of the phonological contrasts of Unami were retained in the pidgin: long and short obstruents *p, t, č, k, s, š, x; h, n, l, y*, and vowels *i,i·, e, e·, ə, ə·, a, a·, ɔ, ɔ·, o·*, and *u*. Clusters are often simplified, however, and initial unstressed syllables omitted: *pack* 'weep' for Southern Unami *ləpákw* 'he weeps'.

As is typical of pidgins, there is little evidence of the complex morphology of the source language. Unami verbs are inflected for the person and number of their core arguments, but in the pidgin independent pronouns are used, based on the emphatic pronouns of Unami. Number and gender are not distinguished, though both Unami and the European languages distinguish singular/plural and animate/inanimate. The same forms function as subjects, objects, indirect objects, and possessors.

(1) DELAWARE PIDGIN PRONOUNS — Goddard 1997: 58

Ne	*olocko*	*toon*	Indian Interpreter
1	hole	go	

'We run into holes.'

Chingo	*kee*	*peto*	*nee*	*chase . . .*	Thomas 1698
when	2	bring	1	skin	

'When wilt thou bring me skins . . .?

Pronouns are often not present when reference is clear: *Kacko pata* 'what bring' = 'What have you brought?' (II)

In Unami, negation is indicated by a negative particle plus negative suffix. In the pidgin, a particle taken from Unami appears alone, usually clause-initially.

(2) DELAWARE PIDGIN NEGATION — II in Goddard 1997: 62

Matta	*Ne*	*kamuta*	*Matta*	*ne*	*hatah*
not	1	steal	not	1	have
'I did not steal it.'			'I have nothing.'		

The most common pidgin word orders are SVO and SOV. Unami has fluid order, with important information generally occurring early in the sentence.

The lexicon comes almost entirely from Unami. Nouns are generally taken from the singular Unami form and used for both singular and plural. Some terms for places include an unanalyzed locative ending: *hocking* 'the ground' (C), S. (Southern) Unami *hák·i* 'earth', *hák·ink* 'on the ground'. Terms for body parts in Unami must contain pronominal prefixes identifying the possessor. In some cases, the indefinite third person form with *hə-* is used: *wippit* 'tooth' (C), S. Unami *wí·pi·t* 'his tooth/a tooth', *ní·p·i·t* 'my tooth'. In other cases, the first person form was used with loss of initial *n-*: *hickott* 'the legs' (II), S. Unami *nhíka·t* 'my leg'. Kinship terms have either lost the possessive prefix by regular phonological processes or appear with a first person prefix: *hissimus* 'brother' (C), S. Unami *naxí·s·əməs* 'my younger sibling'; *nijlum* 'sister' (C), S. Unami *ní·ləm* 'my sister-in-law'. The term for 'mother' is taken from a vocative: *ánna* 'mother' (C), S. Unami *ána·* 'Mother!'

Verbs are based on singular inflected forms, though pronominal prefixes are sometimes missing for phonological reasons. In Unami, distinct verb stems are used with inanimates and animates. (Gender is grammaticized, so not only are persons and animals animate, but some objects as well, such as kettles and pipes.) For verbs with adjectival meanings and for transitives, the inanimate form was usually generalized. In the pidgin, inanimate verbs are used freely with animate nouns, and vice-versa.

(3) PIDGIN DELAWARE ANIMACY — C, Penn in Goddard 1997: 68

horítt	*Manétto*	*Màkerick*	*kitton*
good (INANIMATE)	God	big (ANIMATE)	river
'Good God'		'Delaware River'	

Compounding was used to enrich the lexicon.

(4) PIDGIN DELAWARE COMPOUNDING — C, II in Goddard 1997: 72

Manúnckus	*mochijrick*	*Síngwaes*	*Hockung*	*Tappin*
angry	big	wildcat	above	sit
'mountain lion'			'God'	

At least one pidgin noun, *aana* 'road, way, route', is used as a preposition.

(5) PIDGIN DELAWARE PREPOSITIONAL USE OF NOUN — C in Goddard 1997: 73

ana	*mochijrick*	*bij*
road	big	water
'by sea'		

Like any pidgin, the language shows variation, even within individual sources. As Goddard notes, however, it is clear that it was indeed a learned system, not simply spontaneous attempts at foreigner talk. Though based on Unami, it was also used in the Munsee-speaking areas of New Netherland, and retained forms that were lost in standard Delaware. Goddard surmises that the pidgin must have been developed primarily by Unami speakers seeking to simplify the language for early Dutch speakers, who constituted a small minority at the outset.

> It seems evident that this systematic selection of the inanimate singular as the sole third-person category could only have been accomplished by speakers of Delaware, who must have generalized this pattern from the erroneous use of Unami gender by Europeans. Particularly in cases like the words for 'shoot', which are most commonly used, and most useful, with animate objects, it seems unlikely that Europeans would have consistently learned and adopted the inanimate forms in Pidgin. What is especially striking about this generalization is that it resulted in the collapsing of some distinctions that were common to all the native languages of those who used Pidgin Delaware, such as the distinction between singular and plural and the distinction between animate and inanimate interrogative-indefinite pronouns. (Goddard 1997: 80)

Goddard reconstructs the development and spread of the pidgin as follows. The first permanent Dutch settlers arrived in Unami-speaking territory on the Delaware River in 1624, then moved to Manhattan (New Amsterdam) between 1626 and 1628. A Dutch settler from the Delaware River apparently provided the ('Sankhikan') vocabulary published in de Laet 1633. The Dutch took the pidgin to Manhattan, where they introduced it to Swedes, who in turn taught it to the English. The last attestation of the pidgin is in the Delaware vocabulary in Denny 1860 [1785], which is predominantly Southern Unami but contains a few uniquely pidgin expressions.

Inuktitut (Eskimoan) Trade Languages

Labrador-Inuit Pidgin = Labrador-Eskimo Pidgin, Hudson Strait Pidgin Eskimo, Greenlandic Eskimo Pidgin, Eskimo Trade Jargon = Herschel Island Eskimo Pidgin = Ship's Jargon, Loucheux Jargon, Inuktitut-English Pidgin

The use of trade jargons or pidgins between the Inuit of the Arctic and Europeans as well as other native peoples of the North is attested from the late 17th century into the mid-20th. In most cases documentation of the languages themselves is sparse, but painstaking research has yielded interesting analyses and proposals.

The use of a Labrador-Inuit or Labrador-Eskimo pidgin was first reported in 1694 by the trader Louis Jolliet in the Strait of Belle Isle between Newfoundland and southern Labrador (Dorais 1980b,c, 1996, Bakker 1996b). Only a few words and phrases have been recorded, but Bakker concludes that this pidgin, in use at least up until 1765, was apparently based primarily on Inuktitut with additional vocabulary from French, Montagnais, Basque, and perhaps Breton and Dutch (1996b: 276-7).

There is evidence of another trade jargon in use further north in Hudson Strait, between the Labrador-Quebec peninsula and Baffin Island. In 1697 the Frenchman Bacqueville de la Pothérie described trade with the Hudson Strait Inuit in such a way as to suggest verbal communication (Bakker 1996: 277). British traders arriving over the next century and a half noted its use and recorded a few words. The recurrence of similar forms throughout its history suggests a conventionalized trade jargon. It was apparently based on Inuktitut with some Cree and/or Montagnais words. Similar forms occur in records of trading encounters to the west in Hudson Bay. Bakker proposes that these all constituted a network of pidgins that developed together over northeastern Canada, spread by both native and European middlemen.

Evidence of a relatively stable contact language used between Greenlanders and European whalers and traders is presented in careful detail in van der Voort 1996. The language was in use from the 17th century into the 19th in Davis Strait, between Greenland and Baffinland. It was used only in short trading encounters, but was probably not intelligible to either the Greenlanders or Europeans without previous knowledge. It is attested in three documents: a 1687 word list with phrases and sentences by the Dane Peder Hansen Resen (Kisbye Møller 1987); the journal of a German surgeon, Johann Michael Meyer, on a whaling and trading expedition (1767); and a short wordlist published in 1818 by a British surgeon on a whaling ship, Bernard O'Reilly. The Meyer journal contains particularly valuable material. Each scribe assumed that he was recording pure Greenlandic, but as van der Voort notes, in addition to Greenlandic, it shows a mixture of various Germanic sources and unidentified forms, probably including Danish, Dutch, Frisian, Low German, and High German. It also exhibits features known to be characteristic of pidgins in general.

While Greenlandic shows a basic OV order, van der Voort reports that most pidgin sentences show a tendency toward VO order, in line with Germanic syntax. Function words that would be present in Greenlandic, such as conjunctions and interrogative markers, are missing, as is typical of pidgins. Conjunction is by juxtaposition alone.

(1) West Greenlandic Pidgin — Meyer 1767 in van der Voort 1996: 173

Kynoka	*handlabasche*	*Kakkamia*	*Bosamia*	*ajongelak*	*besingele.*
captain	trade	foxskin	sealskin	good	see

'(Does the) captain (want to) trade fox skins (and) sealskin? It is good. See!'

There is no systematic inflection. For verbs, usually either a third person singular indicative verb is used, or a form with no ending at all, impossible in standard Greenlandic. The verb *handlabasche* 'trade', based on a Germanic root, is used in (1) for 'you trade it with us' and elsewhere for 'we trade it with you'. The ending could be one of several possible suffixes: *-vassi* 'I/you.all', *-vaasi* 'he/you.all', *-varsi* 'you.all/him', or *-vasi* 'you.all/them'. About half of the 90 recorded nouns appear in the absolutive case and about half include the instrumental suffix *-mik*, apparently interpreted as a citation form. It is the most semantically unmarked oblique case, used for indefinite, non-specific, or mass nouns, and probably the most frequently heard. All placenames contain an unanalyzed locative suffix.

Eskimoan languages contain no compounds, but some forms, including the terms for 'foxskin' and 'sealskin' in (1), appear to be the result of compounding: *kaka-p ami-a* 'fox-GENITIVE skin-his' = 'fox's skin' > *kakkamia* 'foxskin'; *puisi-p ami-a* 'seal-GENITIVE skin-his' = 'seal's skin' > *bosamia* 'sealskin'. One compound listed in Meyer, *Koenekiak* 'women's boat', contains a Germanic root *kone* 'woman' and a Greenlandic root *qayaq* 'kayak'. Van der Voort notes that the Danish term for this boat is *konebad*, and that Dutch whalers used essentially the same term, *koeneboot*.

The analyticity typical of pidgins is found here as well. In place of the pronominal suffixes obligatory on Greenlandic nouns and verbs, independent emphatic pronouns are used in the pidgin, on the left in (2). Standard Greenlandic is on the right.

(2) West Greenlandic Pidgin analyticity — Meyer 1767 in van der Voort 1996: 177

Uvanga	*Ocaluctung*	*Maccua*	*Invin*	*Inut-tut*	*oqallorip-punga*
I	speak(he/I)	this/many	Inuit	person-like	speak.well-I
'I speak (like/to) these persons'				'I speak Greenlandic well.'	

Uvanga	*Nulia*	*nulia-ra*
I	wife.his	wife-my
'my wife' (lit. I (his-)wife')		'my wife'

As would be expected, Greenlandic phonetic distinctions unfamiliar to Europeans were not preserved in the trade language. The Greenlandic *orsoq* 'blubber', for example, with uvular trill *r* and uvular stop *q*, was adopted as *oksok* 'bacon'. Some older Greenlandic features that have since been lost were preserved in the pidgin, however, such as an *s/š* distinction and consonant clusters that have now merged to geminates: Greenlandic *nissik* 'nissik' (older spelling *nigsik*), pidgin *Nieksik* 'hook'.

Of the 140-odd words in Meyer, about 25 are non-Eskimo. Significantly, many of these appear in wordlists from other trade languages (Thevet 1558, O'Reilly 1818).

An 'Eskimo Trade Jargon' used over the western Arctic from at least Herschel Island near the Yukon-Alaska border, westward around the coast past Point Barrow and Point Hope as far as Kotzebue Sound in western Alaska, was described in 1909 by Stefánsson. This contact language, also referred to as 'Ship's Jargon', showed variation among both its Eskimo speakers (whose own languages varied) and among the traders and whalers using it. Stefánsson's references to seamen from Martha's Vineyard, Norwegians, Germans, Kanakas (Hawaiians), and Cape Verde Islanders, as well as Germanic forms like *ku´ni* 'wife' suggest that this trade language, too, may not have developed in isolation, but been stimulated by an extensive trade network.

Stefánsson also reported the existence of another 'more highly developed' Eskimo-based contact language, which he termed 'Loucheux Jargon', used between the Mackenzie River Eskimo and Athabaskans around Fort Arctic, Red River, and Fort Macpherson. He estimated its vocabulary at twice that of the Ship's Jargon and hypothesized that it originated through contact with people from Point Barrow or further inland, due to its greater similarity to those forms of Inuktitut. He remarked that the Athabaskans, unlike Europeans, could distinguish velars from uvulars.

Like most trade languages, both of these show invariant verb forms, though Inuktitut verbs are polysynthetic and carry obligatory inflectional endings. Interestingly, the Loucheux verb forms are taken from the Inuktitut third person singular indicative, while the Ship's Jargon verbs are from the first person singular. As in the Greenlandic pidgin, possession is not indicated by pronominal suffixes on nouns, but by an independent emphatic pronoun: *awoʁa kammik* 'I boot' for 'my boot'. Place names typically include an unsegmented locative suffix *-ni*, as in *Oliktóni* for *Oliktok*.

As late as the 1960s Louis-Jacques Dorais observed an Inuktitut-English pidgin used between monolingual Inuits and whites in Arctic Quebec (Dorais 1979b, 1980a, 1996). It was characterized by uninflected Inuktitut stems juxtaposed with an English SVO pattern. Thus beside the Inuktitut *takuvagit* was the pidgin *uvanga taku ivvit* 'I see you'. Beside the Inuktitut *najaqa uqaqtualuk* was *uvanga najak nipi amisut* 'me sister lot voice' = 'My sister talks a lot.' For Inuktitut *umiaqtututuanguvit?* 'Are you the only one to come by boat?', the pidgin shows *ivvit umiaq atausiq* 'you boat one'. Increasing bilingualism and ultimately a shift to English has led to its demise.

Mednyj Aleut = Medniy Aleut = Copper Island Aleut = CIA

At the western end of the Aleutian chain, adjacent to the Kamchatkan Peninsula, are the two Commander Islands, Mednyj or Copper Island and Bering Island. In 1812 the Russian-American Company first brought a team of Aleuts to the previously uninhabited Mednyj Island to hunt seals. In 1828 a permanent village was established, and Aleuts were brought in periodically from other islands. In 1840 Russian pensioners from the company began to settle there as well. The fur trading ended in 1867 when the United States bought Alaska (though not the Commanders), but the population grew to a peak of over 250 in 1900 before declining slowly over the 20th century. In 1969 all Copper Island residents were relocated to Bering Island.

There were three distinct ethnic groups on Mednyj Island: Aleuts, Russians, and a group referred to as Creoles (Russian *kreoli*). Creoles were the children of Aleut mothers and Russian fathers, and all of their descendants. Among this group a fascinating mixed language evolved known as Mednyj or Copper Island Aleut (CIA), which served as the main language of the community for over a century. It is composed of Aleut and Russian vocabulary and grammar, but is mutually unintelligible with both languages. It shows considerable internal variation, but little of the simplification characteristic of pidgins and creoles.

Records of the language come from the work of three Russian linguists. Georgij Menovščikov worked with speakers on Mednyj Island before their relocation, and Evgenij Golovko and Nikolai Vakhtin made trips to Bering Island in 1982, 1985, and 1987, with Golovko returning again in 1988. Golovko reported in 1994 that 10-12 speakers remained. Publications on the language include Menovščikov 1977/1963, 1964, 1968, 1969, Vakhtin 1985, 1997, Golovko & Vakhtin 1987, 1990, Thomason & Kaufman 1988, Golovko 1994, Gray 1994, Sekerina 1994, and Thomason 1997b.

The phonology is essentially Aleut with Russian influences. Certain Russian sounds do not occur in Aleut, such as labials *p, b, f, v*, and palatalized consonants, but these are preserved in lexical items of Russian origin: *peensiyax̂* 'pension', *bol'se* 'more' (from Russian *bol'še*). (Velar fricatives *x* and *ɣ* are spelled *x* and *g*, and uvulars *χ* and *ʁ* are spelled *x̂* and *ĝ*. Palatalization is indicated with an apostrophe.) Based on data from Golovko and Vakhtin, Sekerina reports that the Aleut velar/uvular distinction is fading under Russian influence: *kax̂/qax̂* 'fish'. Aleut preaspirated sonorants *hm, hl,* and *hy* are preserved in forms from Aleut, but *ð, hn,* and *hw* are not. Golovko and Vakhtin note that Mednyj tends to sound like Russian to Russian speakers, in part because of the palatalization, voicing assimilation, and final devoicing of obstruents in words from Russian, and also because of the phrasal intonation.

Both source languages have contributed to the lexicon. Working from material collected by Golovko and Vakhtin, Sekerina assembled a vocabulary of about 500 words. Among the verb roots, 94% were from Aleut and 6% Russian. But among the nouns, 61.5% were from Aleut and 38.5% Russian. (Of course many Russian terms for introduced items have been borrowed into Aleut.) Pronouns were 33.5% Aleut and 66.5% Russian, and function words were 31.5% Aleut and 68.5% Russian.

Aleut is relatively polysynthetic, and much of the morphology has passed into Mednyj. On nouns, Mednyj shows Aleut derivational and inflectional morphology; on verbs, it shows Aleut derivation but Russian inflection.

Derivational suffixes on nouns include a diminutive, an evaluative 'good', and nominalizers for agents, results, instruments, and location: *-cxiza-* 'good', *anĝax̂ina-cxiaz-x̂* 'good man'; *-luǧi-* 'place where', *uŋucii-luǧi-x̂* 'seat' (Golovko & Vakhtin 1990: 102). Inflectional suffixes on nouns are those of Aleut: ergative/absolutive case and singular/dual/plural number. (Russian distinguishes case and number on nouns, but the cases are nominative, accusative, dative, genitive, instrumental, and locative, and numbers are only singular and plural.) Possession in Mednyj, as in Aleut, is indicated by transitive pronominal suffixes referring to the possessor (distinguishing three persons and two numbers) and the possessed (singular, dual, or plural): *ula-mis* 'house-1PL/SG' = 'our house'. Independent Russian pronouns are often added before the noun as well, however: *moy asxinu-ŋ* 'my daughter-1SG/SG' = 'my daughter'; *tátka-ŋ u min'a* 'father-1SG/SG to me' = 'my father'.

Derivational suffixes on verbs include several causatives, a resultative, inceptive, terminative, distributive, continuative, transitivizer, detransitivizer, evaluative 'well', durative, and desiderative: *-kali-* 'start', *cacúĝa-kalii-l* 'he started to crawl'; *-zu-* 'well', *aba-zuu-it* 'he works well' (Golovko & Vakhtin 1990: 102). Aleut verbs may contain a past tense suffix but they must end in a pronominal suffix. Mednyj verbs show the same structure, but the forms of the suffixes are from Russian. On present tense verbs, the regular Russian person endings are suffixed: *-yu* 1SG, *-ish* 2SG, *-it* 3SG, *-im* 1PL, *-iti* 2PL, *-yut* 3PL: *amgix̂li-it* 'she is pretty'. Past tense verbs are formed with the Russian past suffix *-l* followed by suffixes based on Russian independent pronouns: *-l-ya* 1SG, *-l-ti* 2SG, *-l* 3SG, *-l-i-mi* 1PL, *-l-i-vi* 2PL, *-l-i* 3PL. These can be seen in *ukuxta-l-ya* 'I saw' and *ax̂alaa-l-i* 'they died'. (Russian does not distinguish person in past tense verbs, but it does mark gender and number: *-l* MASC.SG.PAST, *-la* FEM.SG.PAST, *-li* PL.PAST. Russian independent pronouns are *ya* 'I', *ty* 'you.SG', *my* 'we', *vy* 'you.PL'.)

A future tense is formed periphrastically on the Russian model. The Russian auxiliary *bud-* is inflected with Russian-based person endings then followed by a verb with the Russian infinitive suffix *-t'*. (Forms taken from Russian are underscored.)

(1) MEDNYJ PERIPHRASTIC FUTURE

taana-x̂	*ni-buud-ish*	*ukuu-t'*
land-ABSOLUTIVE.SG	NEGATIVE-will-2SG	see-INFINITIVE

'You won't see the land.'

The pervasive aspectual distinctions indicated in Russian by prefixes are not marked in Mednyj, which is primarily suffixing, like Aleut. Mednyj has, however, taken the Russian negative prefix *ni-*, as can be seen in (1).

The only marked mood is the imperative *-y*. This could come from either the Russian *-y* or a reduction of the Aleut counterpart *-ay*: Mednyj *xakaa-y!* 'Go-IMPERATIVE!', *ni-ignii-y!* 'NEGATIVE-let-IMPERATIVE' = 'Don't let . . .!'. Some Russian modal verbs have been borrowed as frozen invariant forms: *magla* 'could', *nada* 'must', *xacu* 'I want'.

Full sets of independent pronouns have been taken from Russian, distinguishing three persons, two numbers, and subject and object. There are also object pronouns from Aleut. The pronouns are often used with or in place of the person suffixes.

(2) MEDNYJ PRONOUNS AND INFLECTION

ya	*ivo*	*kataa-ł*	*a*	*on*	*icaa-ł*
I.SUBJECT	it.OBJECT	touch-PAST	and	it.SUBJECT	fall-PAST

'I touched it, and it fell.'

ani	*ni-saxtazaa-yut*
they	NEG-lazy-3PL

'They are not lazy.'

ya	*ni-bud-u*	*iĝataa-ť*
I	NEG-will-1sg	hurry-INF

'I will not hurry.'

While Aleut has a relatively rigid SOV order, Mednyj shows the more fluid order of Russian (apart from object pronouns, which are pre-verbal). Clause-combining is done primarily with conjunctions, complementizers, and relativizers from Russian.

(3) MEDNYJ COMPLEX SENTENCES

yesli	*by*	*oni*	*ukaala-aĝaa-ł-i*	*huzu-um*	*by*	*txichi*	*qala-chaa-ł*
if	were	they	here-move-PAST-PL	all-RFL	were	RFL.PL	glad-CAUS-PAST

'If they came, everybody would be glad.'

An intriguing issue is how this language arose. It apparently did not pass through a stage of pidginization, but was created deliberately by fluent bilinguals. The Creoles learned Aleut from their mothers and Russian from their fathers, as well as from their work, school, and church. They were economically superior to the Aleuts, because they were paid the same wages as the Russians. At the same time, they were looked down on as illegitimate by both the Aleuts and the Russians, particularly before the Church began encouraging their Russian fathers to marry. Their economic advantage disappeared with the departure of the Russian-American Company in 1867. Golovko, Vakhtin, Thomason, and Sekerina conclude that the language was created because young Creoles wanted a symbol of their separate identity.

Michif = Mitchif = Métif = Métchif

Michif is the language of the Métis, descendants of Cree women and fur trappers (many of them French Canadians). Bakker reported in 1997 that it was spoken by under 1000 people in Métis communities in Saskatchewan, Manitoba, North Dakota, and Montana, as well as smaller groups in northern Alberta, the Northwest Territories, Minnesota, and Oregon. There were probably two or three times this many speakers a century before. Most modern speakers are in their 70s or 80s and are now bilingual in English. The language is no longer being learned by children.

Michif shows a fascinating ancestry. In essence, the noun phrase phonology, lexicon, morphology, and syntax are derived from Canadian French, while the verb phrase phonology, lexicon, morphology, and syntax come from southern Plains Cree. The language is mutually intelligible with neither French nor Cree; no modern speakers know Cree, and few know French. The most extensive descriptions of the language are in Bakker 1997 and Bakker & Papen 1996, 1997; material cited here is drawn from these two. A dictionary compiled by two speakers is in Laverdure & Allard 1983. Additional work is in Rhodes 1977, 1986, 1987, Crawford 1973a,b, 1976, 1983, 1985a,b, Weaver 1983, Paper 1987a,b,c, 1988, and Bakker 1989b,c, 1990, 1991, 1994b.

There are two coexisting phonological systems in the language. The phonology of the noun phrase is nearly the same as that of its French ancestor, a western dialect of Canadian French used earlier by the Métis. It shows 14 vowels (10 oral and 4 nasal), and 23 consonants. (Mid vowels *e* and *o* have merged with *i* and *u*, as in Métis French.) The phonology of the verb is that of Cree, with 7 vowels (3 short, 4 long) and 10 consonants. The sounds *y, l, r, f* occur only in words from French, for example, and clusters such as *ht* and *hk* occur only in words from Cree. Allophonic patterns are distinct as well. Thus the vowel *a* in French-based words shows allophones [a] and [æ], while the *a* in Cree-based words shows alternants [ʌ] and [*a*]. There is slight leakage between the two systems. A few vowels in the Cree-based vocabulary are nasalized: Cree *o:hi* > Michif *ɑ̃h ť* 'these'. The liason patterns of French, whereby the final consonant of a word surfaces only before a following vowel, do not appear in Michif. The system has been regularized by a reanalysis of boundaries between articles and following nouns: Michif *za:br* 'tree' (French *arbre* 'tree', *les arbres* [lez arbr] 'the trees'); *lamu:r* 'love' (*l'amour*), *nivrɔ̃ʀ* 'drunkard' (*un ivrogne*), *zafer* 'business' (*les affaires*), *lɔm/nɔm/zɔm/tɔm* 'man' (*l'homme, un homme, les hommes*), *lur/zur/nur* 'bear' (*l'ours, les ours, un ours*). (French *l'* = 'the', *un* = 'a', *les* ='the.PL'.)

Michif also shows sibilant harmony, whereby all sibilants in a word are either alveolar (*s, z*) or palatal (*š, ž*): Michif *sez* 'chair' (French *chaise*), *šava:ž* 'Indian' (French *sauvage*), *zezy* 'Jesus' (French *Jésus*). The harmony is a result of the fact that Cree does not distinguish the two, but it was not a direct effect. The leveling came into Michif from Métis French, which had been influenced earlier by Cree.

Overall the lexicon shows roughly an equal number of elements from French and Cree. Nouns, numerals, and articles are generally French, while verbs, independent pronouns, and demonstratives are Cree. Bakker & Papen 1997: 348 list French/Cree percentages for individual categories: nouns 83-94% French/1% Cree (with additional sources in English and Ojibwe), verbs 0-4%/88-99%, question words <1%/100%, personal pronouns <1%/100%, adverbials 30%/70%, postpositions 0%/100%, coordinating conjunctions 40%/55% (with others from English), prepositions 70-100%/0-30%, numerals 99%/1%, demonstratives <1%/>99%, negators 70%/30%. (Ranges show variation across communities and speakers.)

The noun phrase is strikingly similar to that of French phonologically, lexically, and grammatically. Constituent order is relatively fixed, as in French, and shows nearly the same structure: NUMBER-DEMONSTRATIVE-ARTICLE-ADJECTIVE-NOUN-ADJECTIVE.

Michif articles, like their French sources, distinguish masculine and feminine gender (*la bwet* 'the.FEMININE box', *li za:br* 'the.MASCULINE tree'), singular and plural (*li za:br* 'the.PLURAL trees'), and in the singular, definite and indefinite (*æ za:br* 'a tree'). Possessive pronouns, as in French, distinguish the person and number of the possessor and the gender and number of the possessed: *mɑ̃: papji* '1SG/MASCULINE.SG paper' = 'my paper', *loez arʒɑ̃* '3PL/PL money' = 'their money'. All nouns, including the few from Cree, are thus lexically classified for masculine or feminine gender. Numbers come from French, but like other Michif quantifiers, they usually cooccur with an article: *ʃis li žen dæd* 'ten DEF.PL young turkey' = 'ten young turkeys'.

Adjectives, which also come from French, occur either before or after the noun, generally following the French pattern. An interesting innovation is that adjectives preceding the noun agree with it in gender and number, as in French, but those that follow do not: *la grus tɑ̃t* 'the.FEM big.FEM tent.FEM' = 'the big tent', but *la mæzɑ̃ blɑ̃* 'the.FEM house.FEM white' = 'the white house' (French *la maison blanche* [blɑ̃š]).

Demonstratives, however, come from Cree. Cree demonstratives show a three-way distinction between near, intermediate, and distant or invisible objects, and the three distinctions are preserved in Michif. The demonstratives agree in gender and number with associated nouns, but the gender distinctions are not the masculine/feminine of French. They mark instead the animate/inanimate distinction of Cree. In Cree, as in other Algonquian languages, terms for all persons and animals are classified lexically as animate. Terms for some objects are classified as animate as well. The animacy of a noun from French is often taken from its Cree equivalent. The term *larʒɑ̃* 'money' is grammatically animate, for example, because Cree *so:niya:s* 'money' is animate. The noun phrase thus incorporates complexity from both French and Cree. Every noun, whether from French or Cree (or English), is classified for both masculine/feminine gender (on articles) and animate/inanimate (on demonstratives). Examples of the gender distinctions are in (1). Words from French are underscored.

(1) MICHIF DEMONSTRATIVES — Bakker & Papen 1997: 328

awa li garsɑ̃	'this.near.ANIM.SG	the.MASC.SG	boy'	'this boy'
awa la fij	'this.near.ANIM.SG	the.FEM.SG	girl'	'this girl'
u:ma li papji	'this.near.INAN.SG	the.MASC.SG	paper'	'this paper'
u:ma la bwet	'this.near.INAN.SG	the.FEM.SG	box'	'this box'
anɪma la mæzɑ̃	'that.INTERM.INAN.SG	the.FEM.SG	house'	'that house'
ne:ma li šɑ̃	'that.dist.INAN.SG	the.MASC.SG	field'	'that field'
ɑ̃:hɪ̂ li zafer	'those.dist.INAN.PL	the.PL	business'	'those businesses'

Cree, like other Algonquian languages, also shows a distinction between proximate and obviative participants (section 3.1.3). In essence, the most central animate participant is cast as proximate, and all others as obviatives. In Michif, the distinction is marked on proper names and nouns drawn from Cree, and sometimes on nouns from French: *John ki:wa:pame:w æ šæ(-wa)* 'John saw a dog (-OBVIATIVE).'

Noun phrases with lexical possessors show Cree syntax: *mɑ̃ pči garsɑ̃ sɑ̃ pči žwal* '1SG/MASC.SG little boy 3SG/MASC.SG little horse' = 'my son's pony'.

Michif verbs, clauses, and sentences, show Cree structure. Verbs are drawn almost entirely from Cree and show Cree phonology and morphology. Cree verbs can be highly polysynthetic, and their Michif descendants show little morphological simplification. All contain affixes specifying their core arguments, which distinguish person, number, animacy, and obviation. Indicative and conjunct (subordinate) verbs are distinguished, as well as tense, mood, transitivity, and adverbial notions.

A few French verb stems have been integrated into the Michif verbal morphology, such as *bénir* 'to bless', and *témoigner* 'to witness in court'. They appear in the infinitive form and are always preceded by the French masculine clitic pronoun *le*.

(2) FRENCH-BASED VERB STEM — Bakker & Papen 1997: 318

li	*pe:r*	*ki:-li-bin-i-w*	*li*	*mɑ̃d*
the.MASC.SG	priest	PAST-MASC.SG-bless-INFINITE-3/3OBV	the.MASC.SG	people

'The priest blessed the people.'

Verbs corresponding to French predicate nominals and adjectives have also been formed from French stems. The Michif stem consists of the French-based noun or adjective preceded by an article and followed by a verbalizing suffix *-ɪwɪ* 'be'.

(3) FRENCH-BASED VERB STEM — Bakker & Papen 1997: 319

ki:-te:pšk-am	*e:-la-mitres-ɪwɪ-t*
PAST-succeed-TRANSITIVE.INANIMATE.3/3.OBVIATIVE	CONJUNCT-FEM.SG-teacher-be-3

'She succeeded in becoming a teacher.' (French *la maîtresse* 'the teacher')

Negation is usually accomplished by the particle *nu*, probably from French *non*.

(4) MICHIF NEGATION — Bakker & Papen 1997: 345

nu	*tultɑ̃*	*aja:-w*	*a*	*likɔl.*
NEG	always	be-ANIMATE.INTR.3	in	the.school

'S/he is not always at school.'

Constituent order is fluid as in Cree, reflecting pragmatic rather than syntactic relations. Yes/no questions are formed as in Cree with an interrogative clitic *čĩ* or *či*.

(5) MICHIF YES/NO QUESTION — Bakker & Papen 1997: 340

la	*munisjɑ̃:*	*čĩ*	*kɯt-a:ja:-na:n*	*ši-papa:-ma:či:-jahk?*
the.FEM.SG	ammunition	Q	2-have-2+1	COMP-about-hunt-ANIM.INTR-2+1

'Do we (INCLUSIVE) have ammunition for hunting?'

Interrogative pronouns and adjectives are also drawn from Cree. The adjectives agree in animacy and number with the nouns they modify.

(6) MICHIF INFORMATION QUESTION — Bakker & Papen 1997: 340

ta:na	*lɔm*	*ka:-naškwe:ht-ahk?*
which.ANIMATE.SG	man	COMPLEMENTIZER-answer-TRANSITIVE.INANIMATE.3SG

'Which man answered?'

Subordinate clauses are formed with Cree-based particles plus a conjunct verb.

(7) MICHIF SUBORDINATE CLAUSE — Bakker & Papen 1997: 342

ka-ɯtuhte:-h-ɯɪ-n	*ute:*	*e:-wi:-tuhte:-jan.*
2.FUT-go-CAUS-TRANS.ANIMATE-INVERSE-NON.3	where	CONJUNCT-VOL-go-ANIM.INTR.2SG

'I will take you where you want to go.'

The origin of the system is intriguing. It shows none of the lexical or grammatical simplification typical of trade jargons, pidgins or creoles. In fact it incorporates the most complex areas of each source language: the French noun phrase and the Cree verb. It could only have been created by fully fluent bilinguals who were already adept at code switching and code mixing. Bakker concludes that it probably developed as a symbol of the distinctive ethnic identity of the Métis, brought to the fore by political events around 1812. The language apparently crystalized sometime between 1820 and 1840. Differences between the modern dialects are small, suggesting that all descended from a common parent.

Mobilian Jargon = Mobilian Trade Language = Yamá = Chickasaw(-Choctaw) Trade Language: Lingua Franca Creek, Lingua Franca Apalachee

The most widely used lingua franca in the Southeast was Mobilian Jargon, a pidgin based primarily on Muskogean languages but not mutually intelligible with them. Over the 18th and early 19th centuries it spread from the lower Mississippi Valley northward into present Illinois, east into Florida, and west into Texas. It was eventually used among speakers of Choctaw, Chickasaw (Western Muskogean languages); Apalachee, Alabama, and Koasati (Eastern Muskogean); Atakapa; Chitimacha; Natchez; Tunica; Ofo and Biloxi (Siouan); Caddo; and perhaps some Algonquian languages and even Kiowa Apache (Athabaskan). It was also used with outsiders, who spoke French, English, Spanish, German, French- and English-based creoles, and probably some African languages. It was first mentioned in 1699 (Drechsel 1981: 102) and first identified by the French name *mobilien* in 1704 as the language heard around the trading center of Mobile. It is known to speakers as Yamá, the word for 'yes'. It was used in a variety of contexts, in intertribal gatherings, between European explorers and their guides, missionaries and their flocks, slaves and masters, landowners and laborers, and even in intertribal marriages, but there is no evidence that it was ever creolized. It was in active use through the 1940s and 1950s. James Crawford collected words and phrases in 1970 and 1971 in the Coushatta (Koasati) community at Elton in southwestern Louisiana, and on the Alabama-Coushatta Reservation near Livingston, Texas. Emanuel Drechsel surveyed the Southeast for remaining speakers in 1976-7, 1980-1, and 1989, and recorded further material remembered by elderly Coushatta in Louisiana, Alabama-Coushatta in Texas, and Oklahoma Choctaw originally from Louisiana.

A body of published work is available on the pidgin and its history. Book-length treatments are Crawford 1978 and Drechsel 1997. Additional work is Haas 1975b, Drechsel 1979, 1981, 1983a, 1984, 1985, 1986, 1987a,b, 1993, 1994, 1996, and Munro 1984d. At issue has been whether Mobilian was used before European contact, a position taken by Drechsel (1984), or whether its development was set in motion by the arrival of the French beginning in 1699, a view favored by Crawford (1978) and Silverstein (1996). Drechsel cites the prestige of the pidgin. Crawford points to the frequent mention in early documents of interpreters, noting that if Mobilian were widely known, interpreters would have been unnecessary. Silverstein maintains that there would have been little use for a pidgin before contact if the groups who first used it all spoke related Muskogean languages (1996: 125).

Mention is also made in early documents of several other Muskogean-based contact languages. From the mid-17th century into the 19th, nations in modern Georgia, Alabama, and Florida formed a political alliance known as the Creek

Confederacy. They are said to have communicated in a form of Creek (Muskogee), though only a few isolated words of this pidgin are preserved. Drechsel (1983b, 1997) hypothesizes that this language, known as Lingua Franca Creek or Lingua Franca Muskogee, was part of a larger contact-language system that included Mobilian Jargon. The two would have shaded into each other through a dialect continuum. He also proposes that Lingua Franca Creek was the ancestor of a later pidgin used by Seminoles who had separated from the Creek, known as Seminole Jargon.

In 1710 Pénicaut, a French ship's carpenter, described Apalachee as a mixture of Spanish and Alabama (an Eastern Muskogean language closely related to Koasati). This pidgin, later termed Lingua Franca Apalachee, may have been the same as that used by Juan Ortiz, an interpreter on the 16th-century DeSoto expedition through the Southeast. Drechsel (1997) proposes that it also formed a part of the network of contact media that included Mobilian and Lingua Franca Creek.

As would be expected of a pidgin, Mobilian shows some phonological variation. The description here is drawn primarily from Drechsel 1997. The phonological inventory is similar to those of the Muskogean languages. Consonants include plain stops *p, t, k*, affricate *č*, fricatives *f, ɬ, s, š, h*, nasals *m, n,* liquid *l*, and glides *w, y*. A voiced *b* sometimes contrasts with *p* and is sometimes a variant. (Proto-Muskogean *kʷ* appears as *b* in all of the modern languages except Creek.) An *r* appears in a few words of non-Muskogean origin, such as *rehkən* 'hole' from Tunica *ríhkunírí* 'hole in a tree' (Haas 1953: 250 cited in Drechsel 1997: 62). The Choctaw, who have an *s/š* contrast in their own language, distinguished the two in Mobilian, while the Koasati, who do not, merged them. Europeans had difficulty hearing the lateral fricative *ɬ*. There were three basic vowels *e, a, o* which varied considerably in color. All could be optionally nasalized. Basic syllable structure was (C)V(C). Consonant clusters were relatively rare word-initially, usually resulting from the loss of a vowel and limited to an obstruent + lateral (*blaka* from Alabama *bala:ka* or Koasati *balla:ka* 'to lie' (Munro cited in Drechsel 1997: 65)). Clusters were common internally, however. Gemination could be distinctive: *ala* 'to arrive', *alla* 'child, baby'.

Drechsel estimates that the active vocabulary of individuals probably consisted of 500-1000 words, though speakers often supplemented the stock with terms from their own languages, and new terms were easily coined through compounding. The anonymous author of an 1862 manuscript cites, for example, *pasca* 'bread', *loquefe-pasca* 'brick', *pichik-pasca* 'cheese', *tallai-pasca* 'a rock', *chide-pasca* 'playing cards', and *louquecé-pasca* 'tortoise shell'. The word *loquefé* 'dirt, earth, ground' appears in compounds designating dust and various agricultural tools including 'plow' and 'shovel'. The word *pichik* 'milk' appears in terms for milk products. The word *tallai* 'stone, rock, metal, iron' occurs in compounds for kinds of stone and metal, 'chain', and 'blacksmith'. Drechsel has amassed a vocabulary of around 1250 entries (1996).

The words come chiefly from Choctaw-Chickasaw, Koasati, Alabama, and some other Eastern Muskogean languages. A few are from Chitimacha, Tunica, and Apalachee. There are also terms from Algonquian languages (*papos/papoš* 'baby', *manggasin* 'shoe'), Spanish (*kato* 'cat', *onos(e)/onoš(e)* 'rice'), French (*šapo* 'hat', *(a)sovaš* 'Indian'), and English (*bea* 'beer', *stomak trabəl* 'stomache ache'). Some compounds have elements from different languages, within Muskogean or beyond: *ouka billa* 'tallow candle' from Spanish *vaca* 'cow' and Choctaw/Chickasaw *bila* 'grease, melt'.

Like most pidgins, Mobilian has few affixes. A negative enclitic *-(e)kšo* appears with nouns (*mangoula* 'friend', *mangoula-ekcho* 'enemy'), with verbs (*toukafa* 'to explode, shoot', *toukafa-ekcho* 'to misfire'), and with adjectives (*čokma* 'good', *čokmakšo* 'bad'). The negative marker originated as an independent word 'no', but modern recordings show it fused, with initial vowel deletion and final stress over the full word. The marker *ešt*, resembling the Western Muskogean instrumental prefix *išt-*, appears in terms for instruments: *atchifa* 'to wash', *tatchifa* 'soap'; *honsa* 'to shoot', *chetehonsa* 'dart'; *pissa* 'to see, look', *nichekine* 'eye', *ichit-pissa-nichekine* 'glasses'; *nanni* 'fish', *elbé* 'kill', *nanni-shtelbé* 'fishhook'.

The Muskogean languages contain pronominal prefixes on verbs referring to their core arguments, and pronominal prefixes on nouns referring to possessors. In Mobilian, as first noted by Haas (1975: 259), invariant forms of verbs and nouns are used with independent pronouns *inu* 'I/me/my', *išnu* 'you/your', and *pošnu* 'we/us/our'. Thus in Choctaw, 'I am thirsty' is *oki sa-banna* (water I-want), but in Mobilian it is *oki inu bana*. In Choctaw, 'your father' is *či-nki*, while in Mobilian, the independent pronoun 'you' is used with the possessed noun 'his father': *šnu inke*.

The passage below is part of a text recorded by James Crawford from Arzelie Langley, a Coushatta medicine woman of Choctaw ancestry (Drechsel 1997: 141).

eno	*eya*	*bana.*	*eno*	*čokha*	*eno*	*falama*	*banna.*
I	go	want	My	house	I	return	want

'I want to go. I want to return to my home.

eno	*čokha*	*eno*	*aya*	*banna.*
My	house	I	go	want

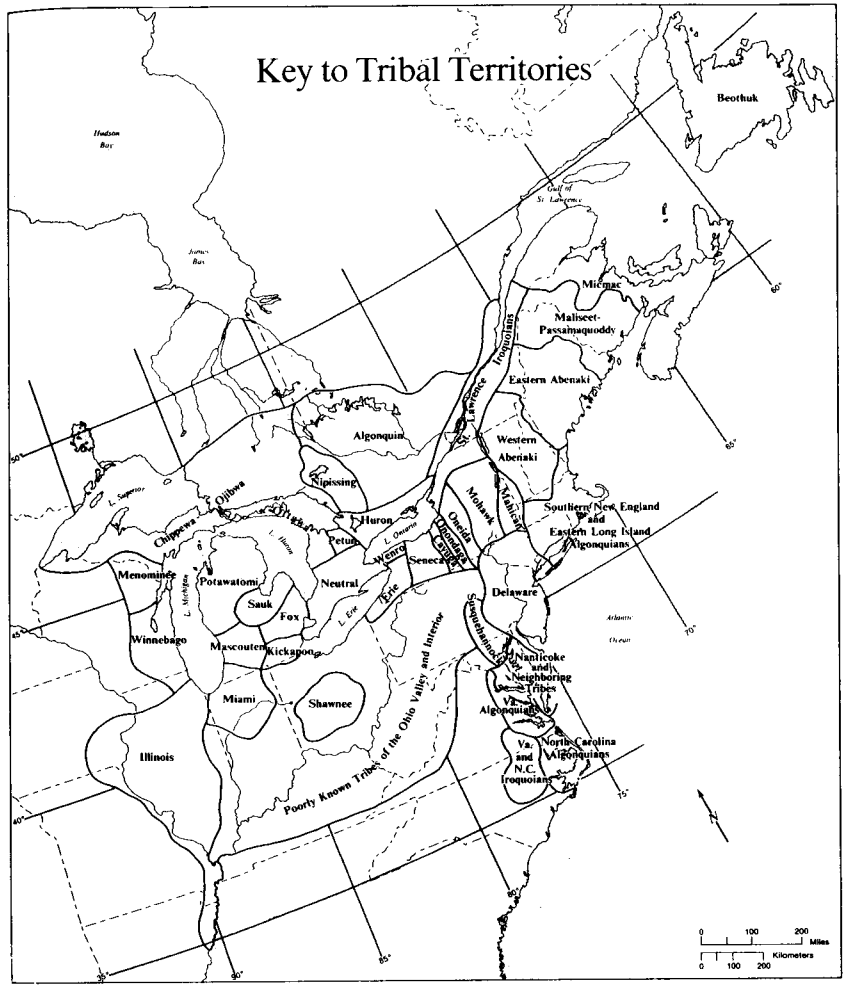
I want to go to my house.

anõte	*neta*	*tokolo*	*nahele*	*meša*	*ma*	*anõte*	*no*	*mente*
again	day	two	tomorrow	after	there/back	again	I	come

Two days after tomorrow, I come back.'



Map 2: Culture Areas of North America. Based in part on Culture Areas in the *Handbook of North American Indians* 4: ix (1988). Smithsonian Institution, Washington, D.C. Roberta Bloom, cartographer



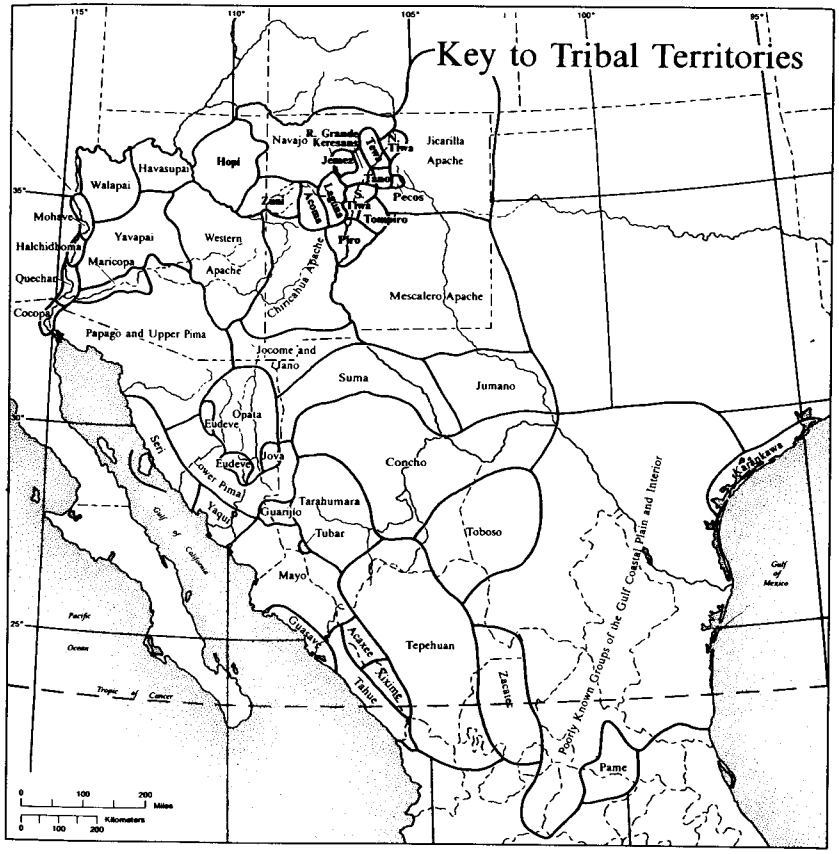
Map 3: The Northeast. Based on the Key to Tribal Territories in the *Handbook of North American Indians* 15:ix (1978). Smithsonian Institution, Washington, D.C.



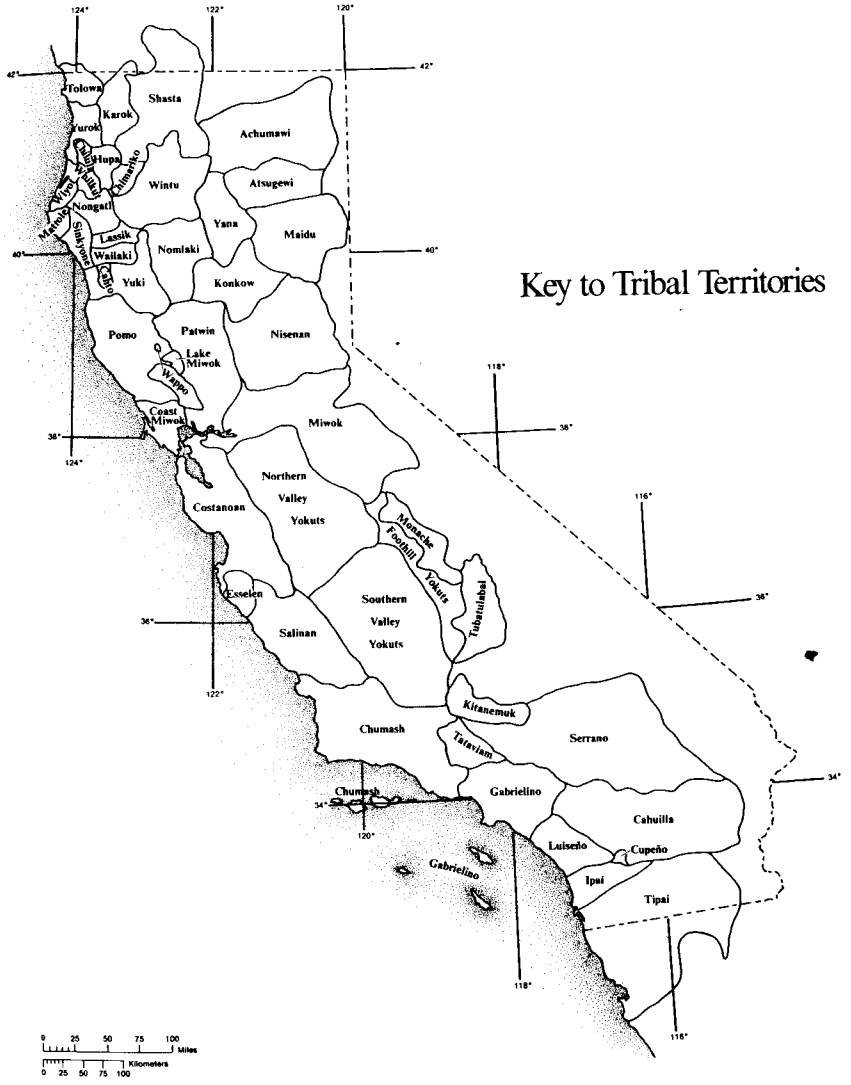
Map 4: The Southeast. Roberta Bloom, cartographer



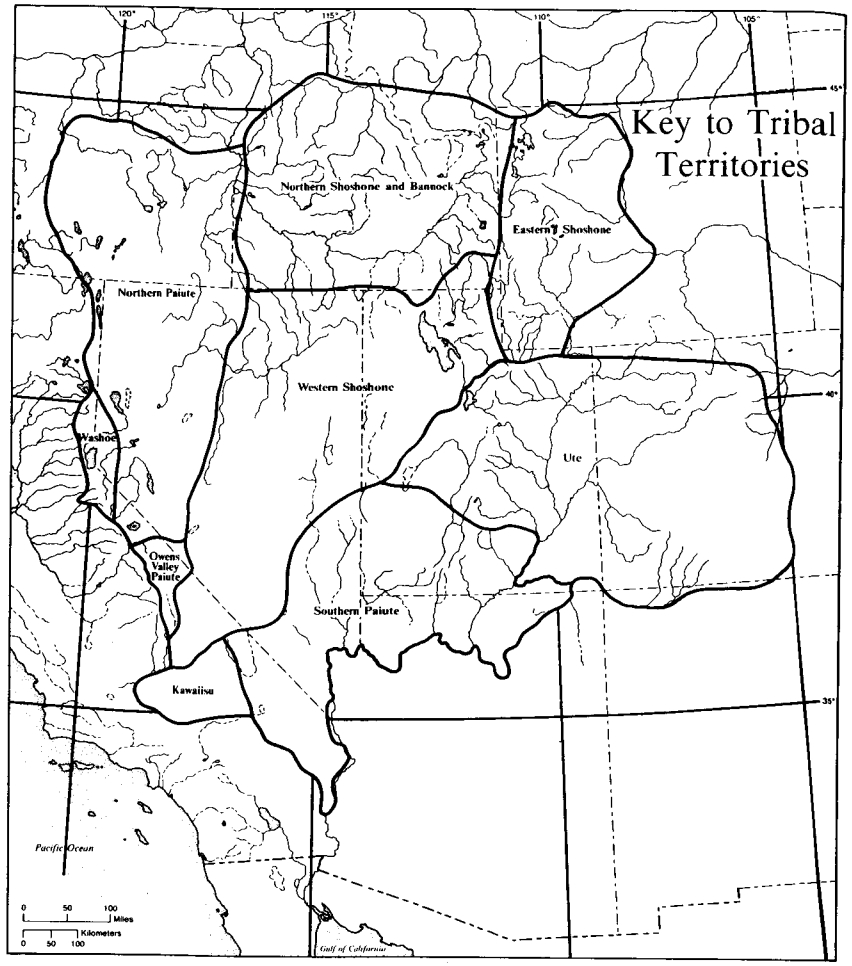
Map 5: The Plains. Roberta Bloom, cartographer



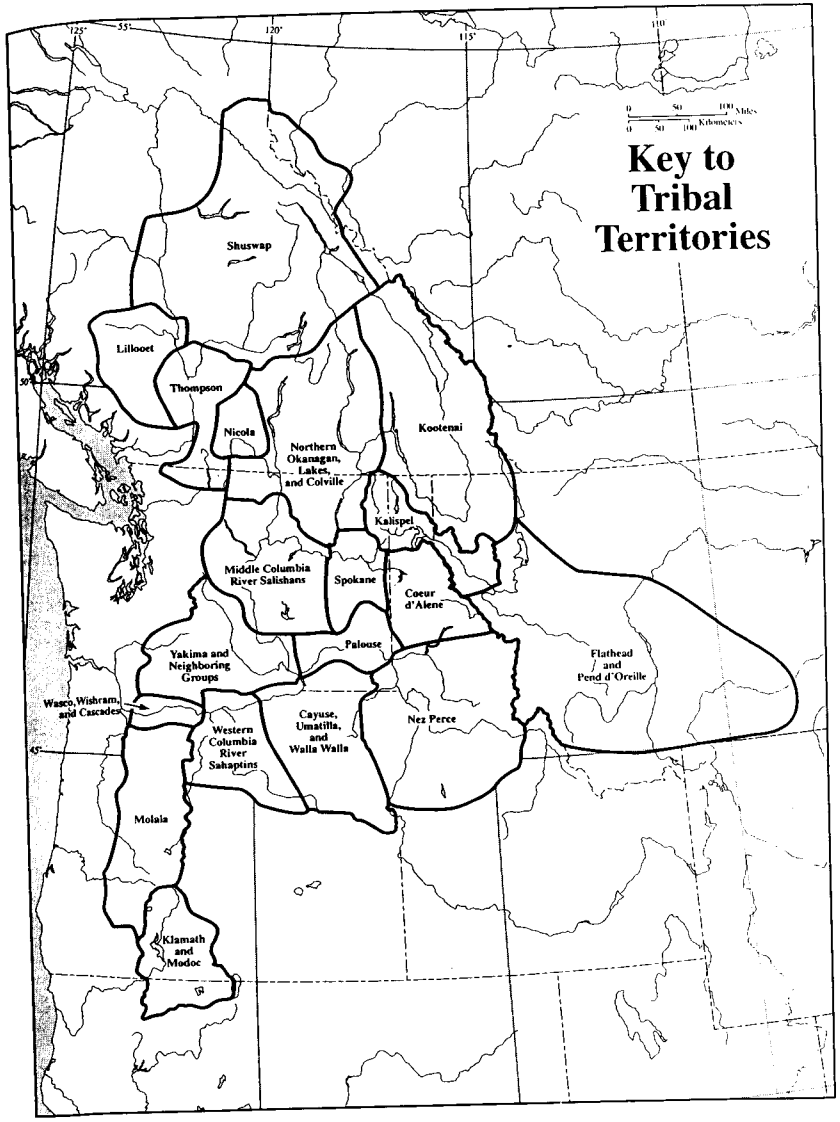
Map 6: The Southwest. Based on the Key to Tribal Territories in the *Handbook of North American Indians* 9:ix (1979). Smithsonian Institution, Washington, D.C.



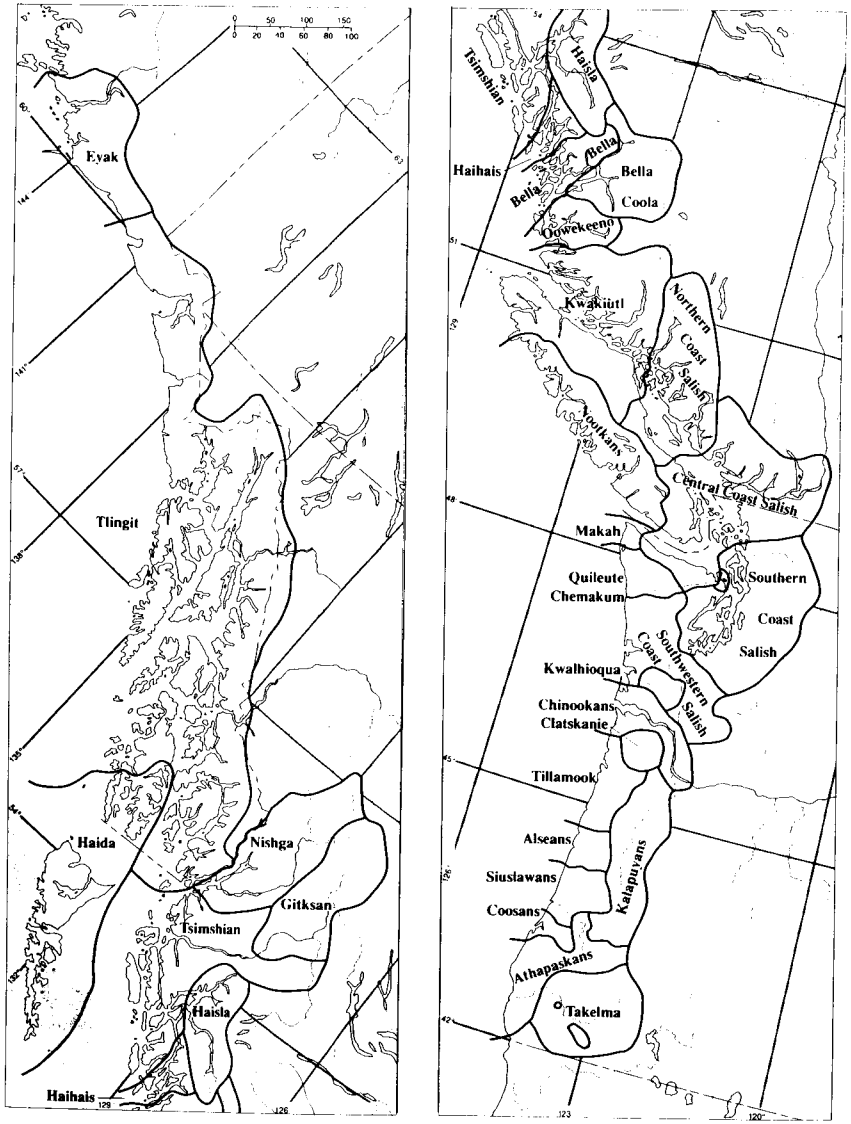
Map 7: California. Based on the Key to Tribal Territories in the *Handbook of North American Indians* 8:ix (1978). Smithsonian Institution, Washington, D.C.



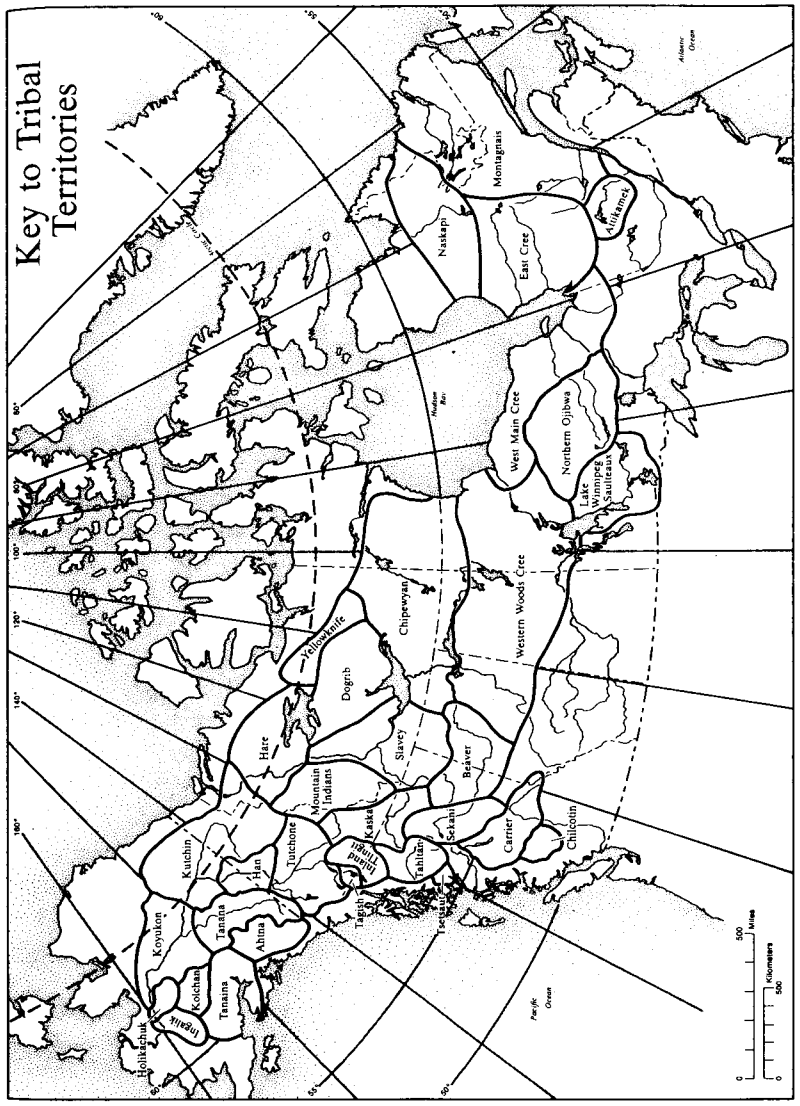
Map 8: The Great Basin. Based on the Key to Tribal Territories in the *Handbook of North American Indians* 11:ix (1986). Smithsonian Institution, Washington, D.C.



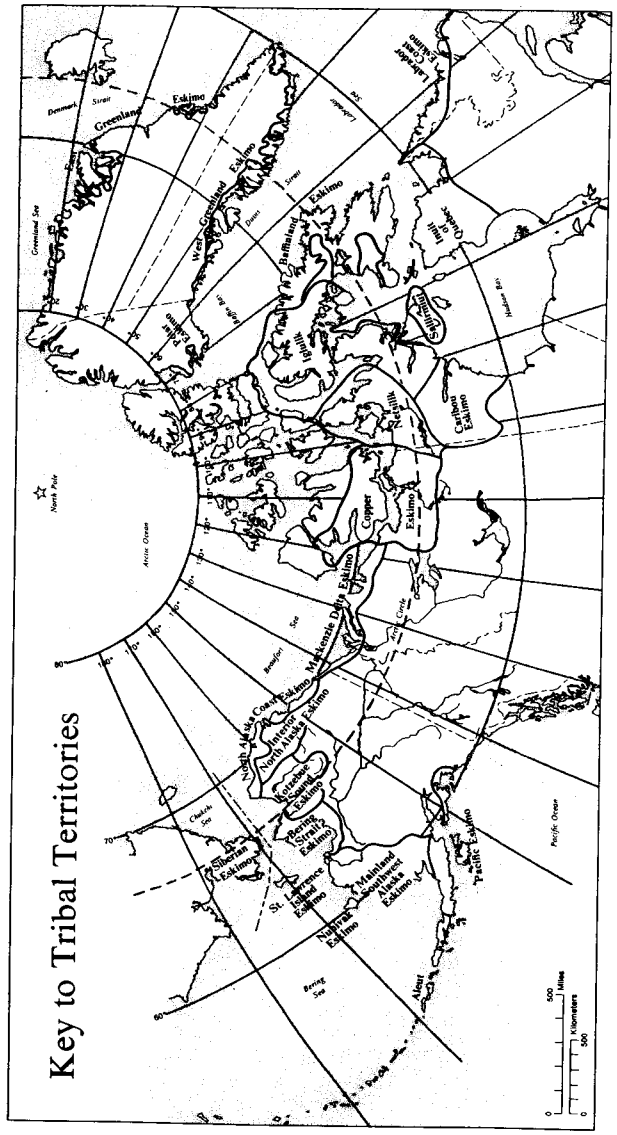
Map 9: The Plateau. Based on the Key to Tribal Territories in the *Handbook of North American Indians* 12:ix (1998). Smithsonian Institution, Washington, D.C.



Map 10: The Northwest Coast. Based on the Key to Tribal Territories in the *Handbook of North American Indians* 7:ix (1990). Smithsonian Institution, Washington, D.C.



Map 11: The Subarctic. Based on the Key to Tribal Territories in the *Handbook of North American Indians* 6:ix (1981). Smithsonian Institution, Washington, D.C.



Map 12: The Arctic. Based on the Key to Tribal Territories in the *Handbook of North American Indians* 5:ix (1984). Smithsonian Institution, Washington, D.C.

References

The bibliographic entries listed here are those referred to in the text, the major accessible works on the languages of North America up to this time.

For the most part it has not been possible to include unpublished materials, apart from dissertations. A wealth of manuscript material is available in the National Anthropological Archive (NAA) of the Smithsonian Institution in Washington, D.C. A second important collection is in the library of the American Philosophical Society (APS), in Philadelphia. Guides to this collection are in Freeman 1966 and Kendall 1982. Notes on the languages of California can be found in the Bancroft Library and the Survey of California and Other Indian Languages at the University of California, Berkeley. Material on Northwest languages is in the Jacobs Collection at the University of Washington in Seattle described in Seaburg 1982 and at Gonzaga University in Spokane, Washington. An extensive collection of materials on the languages of Alaska is housed in the archives of the Alaska Native Language Center at the University of Alaska, Fairbanks. An annotated catalogue of this collection is in Krauss & McGary 1980. Materials on languages of Canada are in the Museum of Civilization in Ottawa. Additional materials are in the Newberry Library in Chicago.

Among the most important sources of information on the languages are the fieldnotes of John Peabody Harrington, collected between 1907 and 1957. Harrington, who was employed by the Smithsonian Institution, documented over 90 languages. He was a perfectionist with a keen ear, and his notes cover nearly a million pages. They are available on microfilm, with a guide in Mills ed. 1981-.

Several bibliographic works provide valuable information. Of special importance are the detailed bibliographies of James Constantine Pilling, bibliographer to the Bureau of American Ethnology. These include a general bibliography (1885) and bibliographies of Siouan (1887a), Eskimoan (1887b), Iroquoian (1888), Muskogean (1889), Algonquian (1891), Athabaskan (1892), Chinookan (1893a), Salishan (1893b), and Wakashan (1894). More recent resources are bibliographies of the languages of California in Bright 1955, 1982 and of the Southeast in Booker 1991a. Singerman 1996 contains a bibliography of dissertations and theses on languages indigenous to the Americas. An especially useful resource is the quarterly newsletter of the Society for the Study of the Indigenous Languages of the Americas (SSILA) put out by Victor Golla, which lists new publications on the languages as they appear.

Several survey collections also provide useful guides to sources, particularly the contributions in Sebeok 1973/1976, those in Campbell & Mithun 1979, and those in the areal volumes of the *Handbook of North American Indians*. Volume 17 of the Handbook is an essential resource on the languages. The *International Journal of American Linguistics (IJAL)* continues to be the major forum for research in the field.

Abbreviations

AA	*American Anthropologist*
AAAS-P	*Proceedings of the American Association for the Advancement of Science*
AES-P	*American Ethnological Society, Publications*
AIK	*Association Inuksiutiit Katimajiit,* Laboratoire d'anthropologie, Laval
AIL-M	*Algonquian and Iroquoian Linguistics, Memoir*
AIL-N	*Algonquian and Iroquoian Linguistics, Newsletter*
AL	*Anthropological Linguistics*
ALH	*Acta Linguistica Hafniensa,* Copenhagen
AMNH-AP	*American Museum of Natural History, Anthropological Papers*
AMNH-B	*Bulletin of the American Museum of Natural History*
AMNH-M	*American Museum of Natural History, Memoirs*
ANLC	*Alaska Native Language Center*
ANLC-RP	*Alaska Native Language Center, Research Paper*
APA-T	*American Philological Association, Transactions*
APS-M	*American Philosophical Society, Memoirs*
APS-P	*American Philosophical Society, Proceedings*
APS-T	*American Philosophical Society, Transactions*
AR	*Anthropological Record,* University of California
AVA	*Abhandlungen der Völkerkundlichen Arbeitsgemeinschaft Letterkunde.* Nortorf: Völkerkundlichen Arbeitsgemeinschaft.
BAAS-R	*British Association for the Advancement of Science, Report*
BAE-AR	*Bureau of American Ethnology, Annual Report*
BAE-B	*Bureau of American Ethnology, Bulletin*
BLS	*Proceedings of the Berkeley Linguistics Society*
CA	*Current Anthropology*
CJL	*Canadian Journal of Linguistics*
CEI	*Cahiers d'études inuit,* Association Inuksiutiit Katimajiit, Laval
CLS	*Proceedings of the Chicago Linguistic Society*
CNAE	*Contributions to North American Ethnology.* Dept of the Interior, U.S. Geographical and Geological Survey of the Rocky Mountain Region
CTL	Sebeok, Thomas ed. 1973. *Current Trends in Linguistics 10: Linguistics in North America.* The Hague: Mouton. Reprinted 1976 in New York by Plenum as *Native Languages of the Americas*
CUCA	*Columbia University Contributions to Anthropology*
EIS	*Etudes/Inuit/Studies,* Quebec
ESCOL	*Eastern States Conference on Linguistics*
HAIL	*Handbook of American Indian Languages*
HNAI	*Handbook of North American Indians*
ICA	*International Congress of Americanists, Proceedings*
ICSL	*Proceedings of the International Conference on Salishan Languages*
ICSNL	*Proceedings of the International Conference on Salish and Neighboring Languages*
IJAL	*International Journal of American Linguistics*
IJAL-NATS	*International Journal of American Linguistics Native American Text Series*
IULC	*Indiana University Linguistics Club*

IUPAL-M	*Indiana University Publications in Anthropology and Linguistics, Memoir*
IUPL	*Indiana University Publications in Linguistics*
JAF	*Journal of American Folklore*
JCA	*Journal of California Anthropology*
JCAPL	*Journal of California Anthropology Papers in Linguistics*
JCGBA	*Journal of California and Great Basin Anthropology*
JCGBAPL	*Journal of California and Great Basin Anthropology Papers in Linguistics*
JCPL	*Journal of California Papers in Linguistics*
JCS	*Journal of Cherokee Studies*
JL	*Journal of Linguistics*
JLA	*Journal of Linguistic Anthropology*
JSAP	*Journal de la Société des Américanistes de Paris*
KAWV	*Koninklijke Akademie van Wetenschappen, Verhandelingen, Afdeeling*
KWPL	*Kansas Working Papers in Linguistics, Lawrence,* University of Kansas
LACUS	*Linguistics Association of Canada and the United States*
Lg	*Language*
Lg in Soc	*Language in Society*
LI	*Linguistic Inquiry*
LR	*Linguistic Review*
LSNA	*Linguistic Structures of Native America,* ed. Harry Hoijer et al. Viking Fund Publications in Anthropology 6. Facsimile reprint 1963, New York: Johnson
MHSC	*Massachusetts Historical Society Collections*
NBMDC	*National Bilingual Materials Development Center,* Anchorage
NELS	*Proceedings of the New England Linguistics Society*
NLLT	*Natural Language and Linguistic Theory*
NMMMS	*National Museum of Man, Mercury Series, Canadian Ethnology Service*
UMOPL	*University of Montana Occasional Publications in Linguistics*
OPAL	*Occasional Publications in Anthropology, Linguistics Series,* Greeley: Museum of Anthropology, University of Northern Colorado
OSUWPL	*Ohio State University Working Papers in Linguistics*
PAAAS	*Proceedings of the American Academy of Arts and Sciences*
PAC	*Proceedings of the Algonquian Conference.* William Cowan, ed. Ottawa: Carleton U.
PiL	*Papers in Linguistics*
PLC	*Proceedings of the Pacific Linguistics Conference*
PS-P	*Philological Society, Proceedings (London)*
RP	*Romance Philology*
s	special session
SASP	*Sacramento Anthropological Society Paper*
SCA	*Smithsonian Contributions to Anthropology*
SCK	*Smithsonian Contributions to Knowledge.* Smithsonian Institution
SCOIL	*Survey of California and Other Indian Languages*
SIL	*Summer Institute of Linguistics*
SIUOPL	*Southern Illinois University Occasional Papers in Linguistics*
SJA	*Southwestern Journal of Anthropology*
SJL	*Southwest Journal of Linguistics*
SL	*Studies in Language*

SSILA	*Society for the Study of the Indigenous Languages of the Americas*
UCPAAE	*University of California Publications in American Archaeology and Ethnology*
UCPL	*University of California Publications in Linguistics*
UHWPL	*University of Hawaii Papers in Linguistics*
UNMPA	*University of New Mexico Publications in Anthropology*
UOPL	*University of Oregon Papers in Linguistics*
UPMAP	*University of Pennsylvania Museum Anthropological Publications*
UWPA	*University of Washington Publications in Anthropology*
UWWPL	*University of Washington Working Papers in Linguistics*
WCCFL	*Proceedings of the West Coast Conference on Formal Linguistics*
WECOL	*Proceedings of the Western Conference on Linguistics*

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