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The Linguistic Ecology of Northwestern California:
Contact, Functional Convergence and Dialectology

by

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A.B. (Dartmouth College) 1996

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in

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Committee in charge:

Professor Andrew Garrett, Chair

Professor Leanne Hinton

Professor Johanna Nichols

Fall 2004

The Linguistic Ecology of Northwestern California:
Contact, Functional Convergence and Dialectology

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Lisa Jane Conathan

Abstract

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by

Lisa Jane Conathan

Doctor of Philosophy in Linguistics

University of California, Berkeley

Professor Andrew Garrett, Chair

This dissertation examines the linguistic effects and sociolinguistic context of language contact in Northwestern California. Northwestern California is a linguistic area that developed under relatively egalitarian conditions. Its profile differs from those contact situations of ‘cultural pressure’ from a socially or politically dominant language.

Chapter 1 introduces the languages to be discussed (Tolowa, Hupa, Karuk, Chimariko, Yurok and Wiyot). Indigenous Northwestern California is a linguistically diverse area, with languages belonging to three families (Athapaskan, Hokan and Algonquian). Archaeological evidence supports a particular migration sequence into Northwestern California, with Athapaskan speakers the most recent migrants, preceded by Algonquian speakers. Speakers of Hokan languages presumably represent the earliest known inhabitants of California. The extensive contact that resulted in the Northwestern California linguistic area persisted for approximately the last millennium. The sources for

this study include early twentieth century field notes of A.L. Kroeber, R.B. Dixon, J.P. Harrington, P.E. Goddard, and G.A. Reichard as well as published descriptions and the author's fieldwork on Yurok.

Chapter 2 presents contact features in Northwestern California, including diminutive consonant symbolism, a diminutive affix of a similar shape, similarities in numeral systems and directional terminology, reduplication marking repetitive aspect, second person prominence in argument marking, a verbal or numeral classifier for 'house,' the presence of numeral classifiers, preverbal particles marking tense, aspect and mood, verb initial word order, frequent loan translations and shared euphemisms

Chapter 3 outlines the sociolinguistic context of language contact in Northwestern California, describing political organization, ethnonyms, multilingualism and dialectology. Early twentieth century records provide evidence for previously unattested dialect variation and a downriver movement of linguistic innovation.

Chapter 4 compares the profile of language contact in Northwestern California to that in three other contact situations. Language contact in Northwestern California (as well as in other linguistic areas) cannot be explained in terms of borrowing or shift-induced interference, and instead represents a third trajectory of functional convergence. Functional convergence involves increasing similarity in the semantic and pragmatic categories expressed, but not increasing similarity in surface syntax.

Chapter 5 concludes with recapitulation of the main findings and a discussion of open questions.

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Symbols in angled brackets < > are an orthographic representation.

Symbols in forward slashes / / or without any bracketing symbol are a phonemic representation.

Symbols in square brackets [] are a phonetic representation.

The languages I am discussing use various orthographies in print and in archival sources. In some cases, I cite forms as written in an archival source rather than regularizing the orthography, especially when phonetic detail is under discussion.

Hupa orthography is as is published in Golla (1996), and Golla and O'Neill (eds.) 2001.

Chimariko orthography follows Americanist convention. Retroflex obstruents are indicated by an underdot (ṭ, ṣ).

Karuk orthography follows Bright (1956). Note that <v> is [β].

Yurok orthography is a practical orthography developed by the Berkeley Yurok Project.

In this orthography, [ɹ] and [ə̃] are <r>, [ɬ] is <hl>, [tʃ] is <ch>, [kʷ] is <kw>, [ʔ] is <'> and long vowels are orthographically doubled.

Wiyot is as in Teeter (1964), where [r] = <d>, and [ɹ] = <r>, with one exception.

Whereas Teeter writes both [ʔ] and [h] as <h>, I distinguish these as <ʔ> and <h>.

Abbreviations

1	1 st person	LOC	locative
2	2 nd person	NEG	negative
3	3 rd person	NF	noninflected form
4	4 th person	OBJ	object
an.	animate	OPT	optative
ATTR	attributive	PASS	passive
CFACT	counterfactual	PERF	perfective
CL	classifier	PRES	present tense
DET	determiner	PL	plural
DIM	diminutive	POS	positive
DUR	durative	pvp	pre-verbal particle
EMPH	emphasis	RED	reduplicated
EXCL	exclamation	REL	relative
FUT	future	REP	repetitive
inan.	inanimate	SAP	speech act participant
INT	intensive	SG	singular
INV	inverse	sp.	species
ITER	iterative	SUBJ	subject

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Leanne Hinton and Andrew Garrett first introduced me to California languages during a day trip to meet a speaker of Sierra Miwok. Since then I have been captivated by the diversity of indigenous Californian languages. Leanne and Andrew have continued their mentorship by advising me on my committee. Leanne, in her role as head of the Survey of California and Other Indian Languages, professor and mentor, has provided a link to an impressive tradition of Native California language documentation in the Survey. Her comments and advice always grounded me in a tradition that I am honored to be a part of. Andrew Garrett was a model advisor. His rigorous demands together with unfailing enthusiasm for my project have influenced my work at every level from theoretical orientation to placement of commas. Johanna Nichols' broad knowledge of typology and diachronic linguistics helped me keep my geographically focused research in perspective. I am very fortunate to have had such a supportive committee, and I thank each of them for their efforts and their expectations.

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Thanks are also due to Aileen Figueiroa, who taught me some of her language. I also thank Marnie Atkins of the Wiyot Tribe, whose enthusiasm and persistence have been inspiring to me in my work on Wiyot.

Lastly, I thank my cartographer-friend John Spelman. Thanks for making me maps and making me coffee.

1. Framing the issues

Northwestern California is a linguistic area and culture area that is situated within a larger macro-area of the Pacific Coast of North America (see Map 1). This micro-area is well known for its linguistic diversity coupled with apparent cultural homogeneity. Edward Sapir noted this:

The Hupa Indians are very typical of the culture area to which they belong. Culturally identical with them are the neighboring Yurok and Karok. There is the liveliest intertribal intercourse between the Hupa, Yurok, and Karok, so much so that all three generally attend an important religious ceremony given by any one of them. It is difficult to say what elements in their combined culture belong in origin to this tribe or that, so much at one are they in communal action, feeling, and thought. But their languages are not merely alien to each other; they belong to three of the major American linguistic groups, each with an immense distribution on the northern continent.

(Sapir 1921:228-9)

Kroeber wrote extensively about Northwestern California (see Kroeber 1905, 1911, 1925, 1936, Kroeber and Barrett 1960, Kroeber and Gifford 1949, Spott and Kroeber 1942, among others), and considered the Yurok to be prototypical of the Northwestern California culture type. Like Sapir, he characterized the area as linguistically diverse but culturally homogenous:

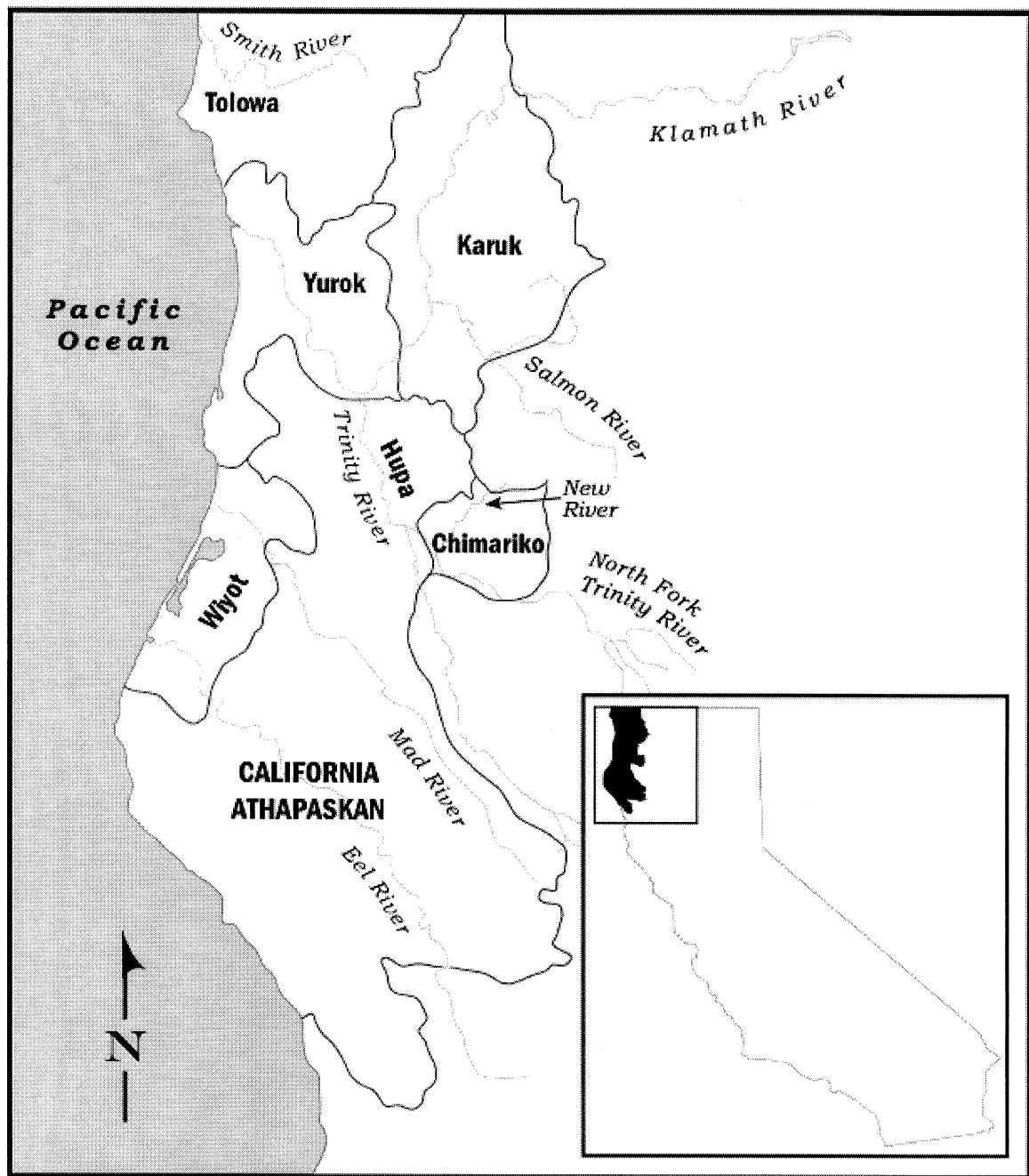
[The Yurok are] a nation resident on the lower Klamath River, near and along the Pacific Ocean, in extreme northern California, ... surrounded by peoples speaking diverse languages but following the same remarkable civilization.

(Kroeber 1925:1)

This characterization of linguistic diversity co-existing with cultural homogeneity raises questions about the relationship between language and culture, and between linguistic and cultural areas. How do linguistic areas develop, and how do some areas cultivate and maintain linguistic diversity while sharing many elements of culture as well as linguistic areal features?

Multilingualism among Native Americans of Northwestern California has led to contact-induced changes in each of the languages. This thesis examines these contact features, some of which are characteristic of the larger Pacific Coast area, and some of which are local to Northwestern California. Lexical borrowing and phonological convergence are conspicuously absent within the smaller area of Northwestern California. Contact-induced changes in these languages can best be characterized as *functional convergence*. The languages have become more similar in terms of semantics and pragmatics, but have not developed isomorphic syntactic constructions or phonetic and phonological similarities.

The sociolinguistic context in which language contact occurred can be partially reconstructed, and contributes to an understanding of this profile of language contact. Political organization and ethnic orientation were profoundly local, as evidenced by local forms of government and interpretations of ethnonyms.



Map 1: Northwestern California. Boundaries as in Haas (1976).

Northwestern California challenges the definition of 'linguistic area,' since its languages demonstrate language contact effects that are sporadically distributed but deeply integrated into their grammar (thus seemingly violating structural hierarchy constraints on contact-induced language change). The atypicality of Northwestern California as a linguistic (or ethnolinguistic) area can be best understood if sociolinguistic context is taken in to account. Without a common lingua franca or prestige variety, language contact was an extremely local phenomenon, and thus led to local effects. Language contact in a context of egalitarian relationships among linguistic communities differs markedly from that in a context of political or social dominance of one linguistic community.

In addition to examining linguistic contact effects, I describe local dialect variation and, to the extent that they are recoverable, language ideologies, in order to frame language contact in its sociolinguistic context. Twentieth century field notes reveal evidence of dialect variation that is not represented in published accounts. This variation often proved troubling for scholars in the early twentieth century, as they attempted to document languages with a rapidly diminishing population of speakers. These records also reveal how speakers defined 'my language,' or how they evaluated their language as opposed to other languages.

Early field notes and ethnography also reveal the extent of multilingualism in Northwestern California. For the most part, multilingualism is only anecdotally attested, but some specifics can be gleaned from ethnographic accounts. Some people were linguistic consultants for more than one language, and at times the speech of multilinguals was a contact variety (for example Birdie James of Bucksport, whose

family was part Yurok, and who spoke Yurok with a Wiyot accent). Despite this high prevalence of multilingualism, there is no reference to code-switching as a multilingual strategy of communication. These ways of practicing multilingualism reflected the local culture of language, and affected the linguistic outcomes of language contact.

Some of the practices described herein do persist today (as attested by the difficulty of some Northwestern California peoples organizing themselves into “tribes” that are the acceptable unit for recognition by the US Government), but the aboriginal sociolinguistic situation in general is largely defunct. Many native languages of northern California no longer have native speakers, and those that do are not being learned by children as first languages. I will not directly address the contemporary situation of language loss and shift to English, instead focusing on records from the first half of the twentieth century. Much could be said, however, about the radical and devastating changes over the last century and a half that have resulted in an entirely different culture of language.

2. Defining a linguistic area

A linguistic area is an area in which languages have similarities to each other that are due to contact, and not to mutual inheritance, chance, or linguistic universals. The term itself is relatively new, having arisen in the 1920’s work of Trubetzkoy (see Trubetzkoy 1928), though interest in areal linguistic relationships in North America goes back earlier, at least to the work of Boas in the Pacific Northwest (e.g. 1894). Areal linguistics was a topic of contention during the famous ‘Boas-Sapir controversy,’ during which Boas and Sapir disagreed over the extent to which contact-induced language contact could cause grammatical convergence (for overviews of this dialogue, see Bright and Sherzer 1976, Sherzer 1976 and Campbell 1997). Prominent studies of linguistic areas include Boas

(1911) on the Pacific Northwest of North America, Sandfeld (1930) on the Balkans, Emeneau (1956) on India, Heath (1978) on Arnhem Land, Australia and Aikhenvald (2001) on Amazonia. In all of these cases there are grammatical features common within the borders of a geographically or culturally defined area and these features cannot be attributed to chance or common inheritance. There have been varying interpretations about exactly how these features spread throughout a linguistic area. In the case of the Balkans, Sandfeld favored adstratum borrowing from Greek, while Thomason (2001:107) favors multilateral influence that resulted from repeated movements of small populations.

When proposing areal features, one must consider if the observed similarity is best explained by language contact or by an alternative explanation such as chance or mutual inheritance. In the case of Northwestern California, some features (such as the presence of glottalized consonants) are shared with a larger macro-area, and thus may not be representative of contact specifically among Northwestern California languages. It is possible that the glottalized consonants in Tolowa, Hupa, Chimariko and Yurok all developed independently. The presence of a similar term for a spiritual being (meaning roughly 'widower-across-the-ocean'), however, is clearly due to contact specifically among Northwestern California languages. This term is restricted to a small geographical area and could not have developed coincidentally in neighboring languages. The languages are from diverse stocks, and this term could not have been inherited from a single proto-language.

Because relatively little is known about pre-colonial language contact in the Americas, it can be difficult to apply strict standards of what constitutes a linguistic area. One difficulty is that there has been little reconstruction of proto-languages, so it can be

impossible to distinguish inherited features from those borrowed. As a result, many studies of indigenous American contact situations focus on synchronic description and comparison rather than the historical circumstances that led to the development of a linguistic area. In the case of Northwestern California, reconstruction and comparison is possible for the Algonquian and Athapaskan language families, but not (to any significant extent) for Hokan languages. The status of Hokan as a genetic entity is controversial, and even if it is accepted that the Northern Hokan languages are genetically related, any reconstruction of detailed aspects of Proto-Hokan or even Proto-Northern-Hokan grammar would be speculative.

3. Languages

California, both as a state and a culture area, is home to a great diversity of aboriginal (in the sense of “Pre-European-American contact”) languages. Some of these languages are easily classified and widespread genetic relations have been identified (the Athapaskan languages such as Hupa and Tolowa, the Algonquian languages Yurok and Wiyot). Others have been classified in large macro-groups for which genetic relationships and subgroups are difficult to establish with certainty (such as the Hokan groups Shastan and Pomoan, the Penutian groups Miwok-Costanoan and Maiduan). There are also several isolates and isolated families in California (such as Yuki and Chumash). Northwestern California is a *residual zone* as defined by Nichols (1992). That is, prehistoric migrations into the area tended to increase local linguistic diversity. Though there is evidence for several language shifts, they were rather small-scale and did not result in rapid spread of one language. This situation is opposite to that of a *spread zone*, in which spreads and/or language shifts tend to decrease local diversity.

The languages included as Northwestern California in this work are (somewhat arbitrarily) Tolowa, Hupa, Karuk, Chimariko, Yurok and Wiyot. Of these, Hupa, Karuk and Yurok have been considered the 'core' groups of a Northwestern California culture area. Other languages of Northern California also show the effects of contact with Northwestern California languages, and are therefore discussed when appropriate. Though Kroeber considered Yurok, Karuk and Hupa to be the typical Northwestern California cultures, there are no firm boundaries to a cultural or linguistic area in this region. Each village or cluster of villages had unique trade, kin and ceremonial relationships to other villages.

Tolowa and Hupa are Pacific Coast Athapaskan languages, though they belong to two different subgroups of this branch. Hupa is classified in the Californian subgroup with the Southern California Athapaskan languages such as Mattole, Lassik, Sinkyone and Nongatl. Tolowa is part of the Oregon Athapaskan branch, along with Coquille, Galice and Rogue River Athapaskan. Chetco is a very closely related dialect spoken just to the north of the border between California and Oregon. Tolowa and Hupa both have a few elderly native speakers, and are undergoing revitalization.

Karuk and Chimariko are both classified as Hokan, which is a controversial grouping. Karuk and Chimariko are very distantly related, if at all. The time depth of any genetic relationship is enough to minimize the possibility that shared retention from a proto-language accounts for similarities. Though there has been preliminary work relating Chimariko and Karuk to other Hokan languages,¹ these studies have not been successful

¹ See e.g. Sapir 1917a, b, Bright 1954, Jacobsen 1958, 1979, Haas 1963, 1964a, Langdon 1974, 1979, Crawford 1976

in discovering regular correspondences in phonology and morphosyntax that would be convincing evidence of a genetic relationship. Archaeological evidence indicates that Hokan-speaking peoples were the earliest inhabitants of California. Karuk has a few native speakers, and is undergoing revitalization. Chimariko had only a few speakers when it was attested in the early twentieth century, and most of these speakers were not entirely fluent. As a result, Chimariko is very poorly documented.

Yurok and Wiyot are Algonquian languages. Their relationship to the Algonquian languages is distant, though firmly demonstrable. Although controversial at first (see Dixon and Kroeber 1913b, Sapir 1913, 1915a, b, Michelson 1914, 1915), this relationship was well-established by Haas (1958) and Goddard (1975). The status of Yurok and Wiyot as a subgroup of Algonquian (called Ritwan) is still an open question, though Berman (1982b, 1984, 1990) has proposed phonological innovations that would define a Ritwan subgroup. Yurok still has native speakers, and is undergoing revitalization. According to Haas (1964b:vi), the last native speaker of Wiyot died in 1962. Today the language is undergoing revival.

The weight given to each language in this study is necessarily unequal, owing both to the availability of primary materials and to the amount of previous analysis each language has had in published form. Preference is given to elaboration of analyses and data not previously published. The languages of Northwestern California differ greatly in the amount of exposure they have had in published literature. Yurok and Karuk are fairly well-represented in grammatical description (see Kroeber 1911:414-26, Robins 1958, Berman 1982a, Berman (ed.) 2001a for Yurok, Kroeber 1911:427-35, Harrington 1932, Bright 1957 for Karuk), while Chimariko and Tolowa are less so (see Dixon 1910,

Berman 1985, Grekoff 1997, Berman (ed.) 2001b for Chimariko, and J. Bright 1964, Collins 1985, Bommelyn 1997 and Tolowa Language Committee 1989 for Tolowa). Wiyot has a published sketch, two grammars and a set of published texts and glossary (Kroeber 1911:384-413, Reichard 1925, Teeter 1964, Teeter and Nichols 1993), but the reduced and disrupted speech community made it difficult to fully document the language. The recent publication of Sapir's Hupa texts (Sapir and Golla 2001) with Golla's accompanying morphological sketch has greatly increased the amount of published data available on that language. In every case, there is a comparatively vast body of unpublished material consisting of fieldworker's notes and in some cases audio recordings. Chimariko in particular suffers from lack of exposure, and it is hoped that the treatment here may serve to partially represent data collected by J.P. Harrington (ms.), which, like most of his data, has never been published.

The languages of Northwestern California are genetically and typologically diverse. They belong to three different major stocks of North American languages (Algonquian, Athapaskan, and Hokan). They are, as are most languages of Western North America, primarily head-marking, with person marking indicated by affixes on nouns or verbs. A very brief overview of the grammar of each of these languages will be helpful in later chapters. Table 1 shows a basic typological overview of Northwestern California languages, and is followed by a brief discussion of each language. A series of dashes in Table 1 means that I have not been able to gather information about a particular feature.

Table 1: *Typological profile of Northwestern California Languages*

	Chimariko	Karuk	Hupa	Tolowa	Wiyot	Yurok
Size of vowel inventory	5 or 10 ²	8	6	5	5	10
Size of consonant inventory	31	16	27	26	26	23
Gemination	no	no	no	no	no	no
Front rounded vowels	no	no	no	no	no	no
Glottalized consonants	yes	no	yes	yes	no	yes
Spectacular absences	no	no	/p/	no	no	no
Spectacular presences	no	no	no	no	no	no
Interdentals	no	θ	no	no	no	no
Syllable structure: ±coda	yes	yes	yes	yes	yes	yes
Syllable structure: ±complex onset	yes	no ³	yes	yes	yes	yes
Lexical use of pitch	no	yes	no	no	yes	no
Head/Dependent marking	head	head	head	head	head	head
Prepositional / Postpositional	post	post	post	post	prep.	prep.
Position of pronominal subject affixes on verbs	pref./suff	pref.	pref.	pref.	suff. ⁴	pref./suff.
Dual	no	yes	no	no	no	marginal
Nominal Number	no	limited	no	no	no	limited
Inclusive/exclusive 1st person	no	no	no	no	no	no
Possessive prefix / suffix	pref./suff.	pref.	pref.	pref.	pref./suff.	pref.
Alienable/inalienable distinction	yes	yes	yes	yes	yes	yes
Numeral classifiers	no	simple	simple	-----	yes	yes
Core cases marked	no	no	no	no	no	no
Passive: morphological/periphrastic	morph	morph	morph	morph	morph	morph
Person agreement on Vs	yes	yes	yes	yes	yes	yes
No. of arguments marked on verb	one	one	two	two	two	two
Causative: morphological/periphrastic	morph	morph	morph	morph	morph	morph
Tense and aspect: Reduplication	repetitive	repetitive	no	no	no	repetitive
Verb suppletion in number categories	yes	yes	yes	yes	some	some
Pro-drop	yes	yes	yes	yes	yes	yes

² The status of vowel length in Chimariko is as yet undetermined.

³ But note that words “beginning with unaccented VCC have optional alternants lacking their initial vowel,” creating initial clusters (Bright 1957:53).

⁴ There are also traces of the use of pronominal prefixes on verbs (see Goddard 1966).

Tolowa is sometimes referred to as *Smith River Athapaskan*. Tolowa distinguishes three stop series: unaspirated, aspirated, and glottalized (1).

(1) *Tolowa phonological inventory*

Consonants:

b	d			g	
p	t	tr [tʂ]	ch [tʃ]	k	
	t'	tr' [tʂ']	ch' [tʃ']	k'	ʔ
	ts'				
				gh [ɣ]	
	s	sr [ʂ]	sh [ʃ]	x	h
		l			
		ɬ			
m	n				
	y			w	

Vowels:

i		u
e	ə ⁵	a

(Bommelyn 1997:9-11)

In addition to the phonemes listed in (1), vowel nasalization results from some /Vn/ sequences, and neutralizes five vowel distinctions to three. Like other Athapaskan languages, Tolowa has complex verbal morphology. Person, transitivity and other grammatical categories are indicated by prefixes, and adverbials and postpositions can be incorporated as prefixes as well. Some tense and aspect categories are marked by suffixes. See Givón and Bommelyn (2000) for an overview of Tolowa verbal morphology. As in Hupa, some verb themes are classificatory.

Hupa has a large consonant inventory (2), with two series (plain and glottalized), palatalized velars, some labialized consonants, and three laterals (l, ɬ, ɬ̥). The consonant

inventory of Hupa is very unusual, lacking labial stops (though [b] does appear rarely, its status as a phoneme is marginal), a plain velar (outside of diminutive consonant symbolism) and the affricate tʃ (which is common in other Athapaskan languages). Hupa has four vowel qualities, with length distinctive on non-high vowels.

(2) *Hupa phonological inventory*

Consonants:

	d		g ^y	g	G	ʔ
	t		k ^y			
	t'		k ^{y'}		q'	
	ʒ [dz]		ʒ̥ [dʒ]			
	c		č ^w			
	c'		č ^{w'}			
	ʎ [tʃ']					
W [ʌ]	s, ʃ			x		h
				x ^w		
	l					
m	n					
			y		w	

Marginal phonemes: b, š, g, k, k', ŋ

Vowels:

i		
e		o, o'
a, a'		

(Golla 1996:366-8)

Diminutive consonant symbolism is common (W → s, ʒ → ʒ̥, č^w → c, č' → c', g^y → g, k^y → k, k^{y'} → k') and occurs with or without a diminutive enclitic. Person marking (subject and object on verbs, possessor on nouns) is indicated by prefixes, and distinguishes

⁵ The phonetic symbol ə is substituted for Bommelyn's u with two horizontal lines. Bommelyn describes this vowel as "low central" (1997:12).

person (1, 2, 3, 4), number (sg., pl. for 1 and 2), animacy (animate, inanimate), and obviation status (obviative). Tense and aspect are generally marked by verbal prefixes and variants of verbal stems, including four different perfective aspect prefixes (general perfective, completive, inceptive and a fourth used with secondary stems). Some tense and aspect categories are marked by verbal enclitics. Some verb themes are classificatory, specifying the shape or substance of their subject or object. Relational nouns form postpositions. Word order is discussed in Chapter 2, § 2.8.

Yurok has a consonant inventory typical of western North America (3), with two series (plain and glottalized). Glottalized sonorants can also be considered distinct phonemes (Blevins 2003). Six vowel qualities are distinguished (though perhaps these are better collapsed to five, since the distinction between /e/ and /a/ is marginal), including a central rhoticized vowel [ɤ̣], written <r>. Vowel length is distinguished on all vowels but /e/.

(3) *Yurok phonological inventory*

Consonants:

p	t	k	kw [k ^w]	' [ʔ]
p'	t'	k'	k'w [k' ^w]	
		ch [tʃ]		
		ch' [tʃ']		
	hl [ɬ]			
	s	sh [ʃ]	(x) ⁶ , g [ɣ]	h
	l			
m	n			
	r	y	w	

Vowels:

i, ii [i:]	u, uu [u:]
e	r [ə], rr[ə:]
	o, oo [o:]
a, aa [a:]	

(Robins 1958:1-2)

Diminutive consonant symbolism and vowel rhoticization occur (l → r, t → ch, e, o, a → r) (see Berman 1986). Person marking (subject and object on verbs, possessor on nouns) distinguishes person (1, 2, 3, 4), number in parts of the grammar (sg., pl., and a marginal du.) and mood (indic., sub., attr., imper.), and is prefixed or suffixed depending on the circumstances. Tense and aspect are largely indicated by preverbal particles, though two types of pluractionality are distinguished via prefixal reduplication and the infix *-eg-*. Adjectives and numerals are verbal. “Medial” morphemes (used in the Algonquianist sense) classify verbal arguments or adverbially modify the predicate, and “final” morphemes manipulate aktionsart and argument structure (Garrett forthcoming). Locative can be marked on nouns. Spatial relationship can be indicated with prepositions. Word

⁶ The status of /x/ as a phoneme is marginal.

order is roughly _VSO, with an initial slot where focused and contrastive elements appear.

In some early work, Wiyot was referred to as *Wishosk*. Wiyot has two consonant series (plain and aspirated, sometimes represented as voiced and unvoiced) (4). There are five vowel qualities, and vowel length is not distinguished. Lexical accent is distinctive. Teeter (1958:17) describes two pitch accents (high and falling) which are distinctive only word finally, but since documentation of the occurrence of pitch accent is sporadic in Teeter's materials and nonexistent in earlier materials, I do not indicate it in Wiyot data in this work.

(4) *Wiyot phonological inventory*

Consonants:

p	t	k	kw [k ^w]	ʔ
ph [p ^h]	th [t ^h]	kh [k ^h]	kwh [k ^{wh}]	
	c [ts]	č [tʃ]		
	ch [ts ^h]	čh [tʃ ^h]		
	l			
	ɬ			
b [β]	s	š [ʃ]	g [ɣ]	h
m	n			
	d [ɾ]			
	r [ɹ]	y	w	

Vowels:

i	u
e	o
a	

Pitch accent: high <ˈ>, falling <ˋ> (not indicated here)

(Teeter 1964:13)

Diminutive and augmentative consonant symbolism (l > r; t > c, č; th > ch, čh; s > š)

occurs with or without a diminutive suffix. Person marking distinguishes person (1, 2, 3, 4), definiteness (3 indef.), number (sg., pl.) and mood (indic., imper., neg., subj.), and can be prefixing or suffixing, as in Yurok. Tense and aspect is indicated by preverbal particles. Locatives can be marked on nouns. “Medial” and “final” morpheme categories are as in Yurok. Numerals and adjectives are verbal. Word order is relatively freer than that in Yurok, though it is possibly fitting to ascribe the same _VSO structure to Wiyot.

Karuk is an alternate spelling of *Karok*. Karuk has the smallest consonant inventory of any language in Northwestern California (5), with only one stop series, and a

⁷ I list two glottal phonemes (/h/ and /ʔ/), while Teeter collapses them into one (/h/).

proliferation of fricatives. Karuk has a five vowel system, distinguishing length in high and low vowels, but not mid vowels. High and falling pitch accent are distinguished on non-final syllables with short vowels, and all syllables with long vowels.

(5) *Karuk phonological inventory*

Consonants:

p	t	k	ʔ
		č	
f	θ	s	š x h
v [β]	r	y	
m	n		

Vowels:

i, i·	u, u·
e·	o·
a, a·	

Pitch accent: high <ˈ>, falling <˘>

(Bright 1957:7)

Diminutive consonant symbolism ($r \rightarrow n$, $\theta \rightarrow \check{c}$) is common, and can co-occur with a diminutive morpheme as in Wiyot and Hupa. Karuk person marking (subjects and objects on verbs and possessors on nouns) is indicated by prefixes which distinguish person (1, 2, 3, 4), number (sg., du., pl.) and mood (indic. positive, indic. negative, imper.). Inverse configuration is marked with a suffix (Macaulay 1992, 2000). Tense and aspect are primarily indicated by enclitics, though past tense and a pluractional aspect are indicated by suffixes, and adverbial preverbal particles are used as tense and aspect markers. Most nominal and verbal derivational affixes are suffixes, including an abundance of locatives and applicatives. Adverbs and adjectives are nominal. Word order is relatively free.

Chimariko has a large consonant inventory, with three stop series (plain, glottalized and aspirated), and retroflex apicals (6).

(6) *Chimariko phonological inventory*

Consonants:

p	t	ʈ		k	q	ʔ
p ^h	t ^h	ʈ ^h		k ^h	q ^h	
p'	t'	ʈ'		k'	q'	
				č		
				č ^h		
			c'	č'		
			s	š	x	χ
	l					h
w	(r)		y			
m	n					

Vowels:

i u
e o
a

(Grekoff ms.)

Note that several aspects of the Chimariko phonological inventory are questionable. Vowel length may or may not be phonemic. Some speakers, but not all, contrasted *l* and *r*. Some speakers may also have had a retroflex affricate. Person marking references a single argument (subject or object on verbs, determined by a person hierarchy, possessor on nouns), and is either prefixed or suffixed to the verb (depending on the phonological shape of the verb stem or alienability status of possessor relationship with nouns). Person marking distinguishes person (1, 2, 3), and number (SG., DU., PL.). As in Karuk, nominal and verbal derivational affixes are suffixes, and tense and aspect information is marked by suffixes. Chimariko also has an abundance of locative and directional suffixes.

4. Sources

The sources of my data are diverse, including fieldwork on Yurok, archival research on the field notes of P.E. Goddard, J. P. Harrington, A.L. Kroeber, C. Hart Merriam and G. Reichard, and synthesis of published material.

Hupa data and description is largely informed by two sources: Golla's (1996) sketch, and Sapir's material as edited and described by Golla (Sapir and Golla 2001). The latter source contains almost five hundred pages of texts, meticulously glossed, with Golla's translations, notes, partial lexicon and morphological sketch. Goddard's materials (1903, 1904, 1905, 1911) provide additional examples.

Tolowa is described in a dictionary (Tolowa Language Committee 1989) and Bommelyn's (1997) M.A. thesis, though this grammatical description is only partial. Several articles have proven useful, such as J. Bright (1964), Collins (1985, 1989), and Givón and Bommelyn (2000). Early documentation includes field notes of Goddard, Harrington and Merriam.

Yurok data is from Robins' (1958) grammar, Kroeber's unpublished field notes, and recent fieldwork carried out by the members of the Berkeley Yurok Project, including the author.⁸ Kroeber's material consists of thousands of pages of ethnographic and linguistic notes. The assistance of the Berkeley Yurok Project, and especially of Andrew Garrett, has been invaluable in researching Kroeber's material. Smaller amounts of data were also obtained from the field notes of C. Hart Merriam, William Bright, and Mary Haas.

⁸ The work of the Berkeley Yurok Project is funded in part by the National Science Foundation grant BCS-0004081.

Karuk description and data is based mostly on the work of William Bright (e.g. 1957), as well as personal communication with Dr. Bright. Karuk texts are published in Harrington (1932). The unpublished material of J. P. Harrington, A.L. Kroeber and C. Hart Merriam has also been important, especially in the investigation of dialectology in Chapter 3.

Chimariko is the least well-attested of any of the languages discussed, and has been without native speakers for the longest. Chimariko data is largely drawn from the notes of George Grekoff (dozens of cartons stored in the archives of the Survey of California and Other Indian Languages, University of California, Berkeley). The language was no longer spoken by the time Grekoff began to work on it, so his work was based on material collected by Dixon, Sapir and Harrington, among others. Grekoff meticulously analyzed the corpus of available Chimariko material, standardizing the orthography and developing extensive analyses in *Stratificational Grammar*. The orthography used in this paper is Grekoff's, and may not be entirely representative of the phonemic system of Chimariko. Vowel length in particular is sporadically attested. A summary of the contents of the Grekoff collection is presented in Hinton and Wood (2000).

5. Prehistoric archaeology

The archaeological periods of California as defined by Chertkoff and Chertkoff (1984) are as in (7).

(7) *Archaeological periods in California*

Paleoindian	(10,000)-9000 B.C.E.
Early Archaic	9000-6000 B.C.E.
Middle Archaic	6000-4000 B.C.E.
Late Archaic	4000-2000 B.C.E.
Early Pacific	2000-500 B.C.E.
Middle Pacific	500 B.C.E.-500 C.E.
Late Pacific	500-1500 C.E.
Final Pacific	1500-1769 C.E.

(Chartkoff & Chartkoff 1984)

This thesis is primarily concerned with the Pacific Period (2000 B.C.E. ~1800 C.E.), a time during which there were many migrations into Northwestern California, resulting in the ethnographic situation as we know it today.

Archaeological and linguistic evidence supports the hypothesis that Algic and Athapaskan peoples migrated to Northwestern California within approximately the last millennium (and were the first permanent occupiers of coastal settings), while speakers of Hokan languages occupied inland areas much earlier, and may be the first peoples to have settled in Northwestern California. According to Lathrap and Troike (1983-4), Hokan speakers can be associated with the Early Milling Stone assemblages, where artifacts indicate a generalized hunter-gatherer subsistence that pre-dates the specialized focus on salmon and acorns in Northwestern California. Though the relative sequence of migrations is well-supported, the absolute dates of any migrations are as yet unsure. Whistler (1979) proposed that Algic peoples migrated at approximately 1000 C.E., and Athapaskans at approximately 1300 C.E. The actual dates may have been earlier, but certainly were not later than this.

If it is true that the Algic and Athapaskan peoples were the first to permanently live along the coast, it is likely that many of the areas they occupied were previously sparsely

populated. That is, when they migrated, they came to occupy previously under-utilized areas. A notable exception is the Hupa, who settled along the Trinity River, and certainly encountered previously existing permanent settlements there, probably Chimariko or people related to the Chimariko. In historic times, Chimariko speakers were shifting to Hupa, and thus contracting linguistically, culturally and geographically, as evidenced by asymmetrical patterns of bilingualism and the distribution of Chimariko place names. Most attested Chimariko speakers were bilingual (and dominant) in Hupa or Wintu. This shift of Chimariko to neighboring languages was recorded by Powers (1877):

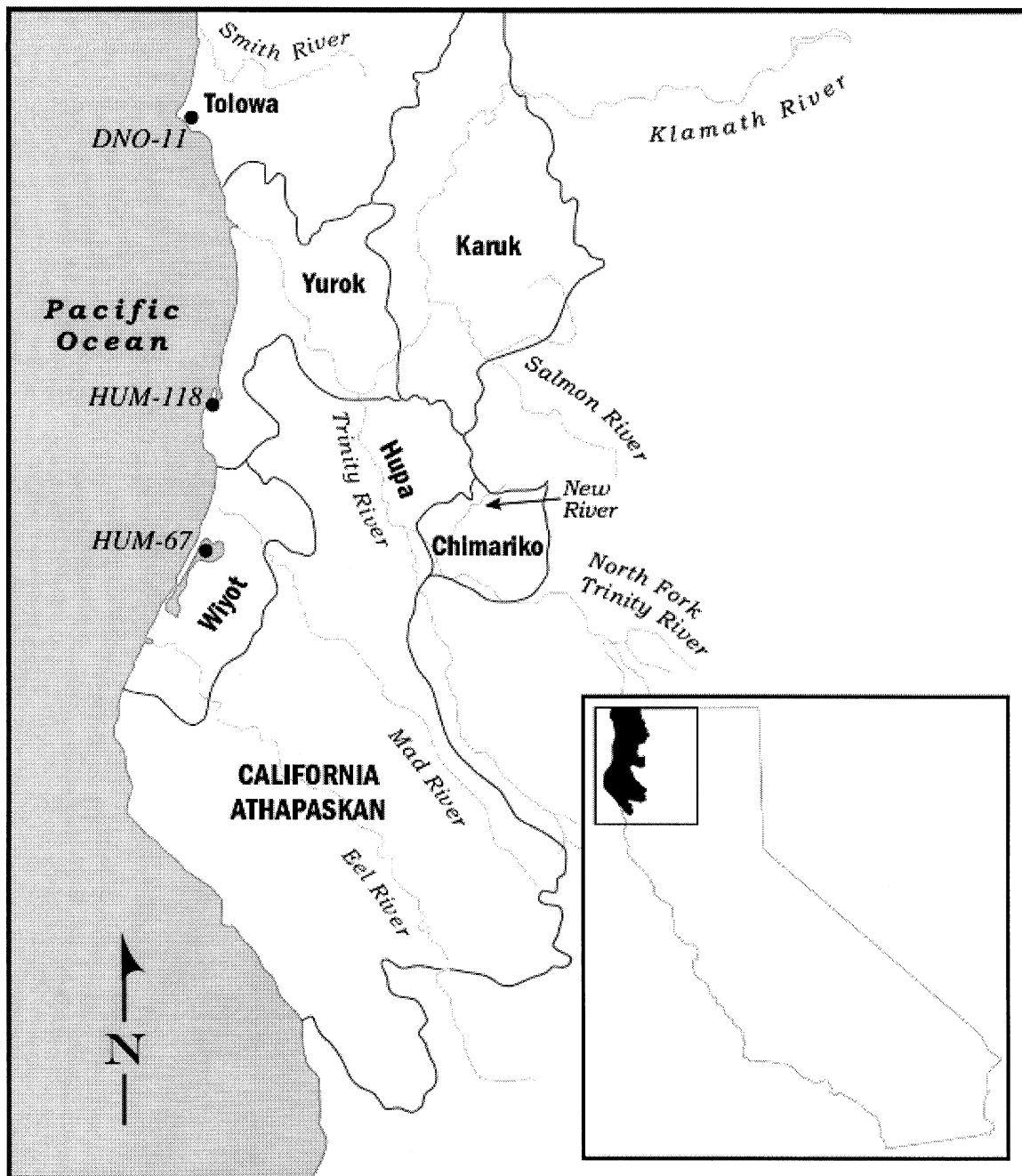
The complete subjugation of [neighboring tribes] appears to have occupied the Hupâ a long series of years, and in the case of the Chi-mal'-a-kwe at least it was only just completed when the whites arrived.

(Powers 1877:87)

Bauman (1980) also reconstructs a stage when Chimariko speakers occupied a larger area than is historically attested, based on morphological analysis of place names.

The archaeological record for Northwestern California is relatively short and based on relatively few sites. Archaeological sites referred to in this thesis are listed in (8) and shown in Map 2. (This list is by no means comprehensive, but represents most of the major sites in the area, and the ones that are relevant to the current discussion.)

(8)	<i>Date</i>	<i>Location</i>	<i>Reference</i>
	310 B.C.E.	DNo-11 (Point St. George I)	(Gould 1966, 1972)
	900 C.E.	Hum-67 (Tolowot)	(Heizer & Elsasser 1964)
	1310 C.E.	Hum-118 (Patrick's Point)	(Elsasser & Heizer 1966)
	1400 C.E.	DNo-11 (Point St. George II)	(Gould 1966, 1972)



Map 2: Some archaeological sites in Northwestern California

There is no evidence for occupation of much of Northwestern California before the *Pacific Period* (beginning 2000 B.C.E.). No artifacts can be dated to the Paleo-Indian period (ca. 9000 B.C.E.). The coast was settled much later than inland areas (and much later than the coast of Southern California), a phenomenon Hildebrandt and Levulett (1997) attribute to the abundance of food resources inland. According to this theory, people in southern California had to rely both on coast and inland resources, while this was not necessary in Northwestern California until population pressure increased during the Pacific Period.

During the Archaic period, the archaeological pattern called the *Borax Lake pattern* is attested in the Coast ranges, but not along the Coast. The Borax Lake pattern includes evidence for generalized hunting and gathering, as well as exploitation of seeds (Chartkoff & Chartkoff 1984:109-13). The people of this archaeological pattern probably migrated seasonally along with deer herds. It is likely that the populations represented by this tradition are the ancestors of Northern Hoka peoples such as the Pomo, and in Northwestern California, the Karuk and Chimariko. Some characteristics of the Borax Lake archaeological pattern are listed in (9).

(9) *Characteristics of the Borax Lake Pattern*

- Square-stemmed “Borax Lake” projectile points.
- Milling stones and manos (seed processing).
- Tools associated with deer processing (e.g. scrapers).

(Chartkoff & Chartkoff 1984:194-203)

During the Pacific Period there is evidence of increasing localization and specialization (not only in Northwestern California, but throughout California and elsewhere in Western North America). People began to rely on two or three important staple foods, develop food-processing technology that allowed them to preserve and store

these staples, and become more specialized in their economies. The Pacific Period thus saw the regionalization and specialization of economies in California, as well as the development of cultural 'complexity' (a term referring to primarily to class stratification, and specialization in activities). The Pacific Period in Northwestern California is the time when the first permanent villages are archaeologically visible. Inland sites are much earlier than coastal sites. Some have speculated that this apparent time lag is due to limited archaeological visibility on the coast, but recent excavations by V.A. Levulett (Hildebrandt & Levulett 1997) indicate that the coast was in fact settled much later than inland areas. These excavations were carried out in an area south of Humboldt Bay where the coast has risen faster than sea level, increasing archaeological visibility. According to this model, Algonquian immigrants settled primarily in previously sparsely populated areas (where there were no permanent settlements, only temporary camps used to access particular resources). Algonquian peoples would have brought technology for fishing, riverine boats, and processing and storage of fish. Migration of the Algonquian peoples can best be associated with the appearance of the Gunther archaeological pattern, which later became characteristic of all of Northwestern California. Characteristics of the Gunther Pattern are listed in (10), many of which are also found to the north along the Pacific Coast.

(10) *Characteristics of Gunther/Northwestern California Pattern*

- Dentalium money (imported from Puget Sound)
- Bone head-scratchers
- 'Gunther Island Barbed' projectile points
- Imported obsidian blades
- Zoomorphic clubs
- Harpoon points, stone net weights, shell fishhooks

(Chartkoff & Chartkoff 1984:194-203)

Early sites in Northwestern California do not show this pattern. This can be seen clearly in the description of Point St. George (DNo-11), which has two strata. In the earlier

stratum (ca. 300 B.C.E), there is no evidence of the exploitation of marine resources or of permanent villages (11), while the later stratum exemplifies the Gunther Pattern, and can probably be associated with the historically known Tolowa village of *Taiga'n*. DNo-11 is dated and described in Gould (1966, 1972).

(11) *Characteristics of lower stratum, DNo-11 (Point St. George)*

- Temporary camp used for flint-chipping.
- No evidence of fishing or processing of marine resources.
- No conclusive evidence of acorn processing technology.

(Gould 1966:87)

Gould hypothesizes that the earlier stratum of Point St. George was a temporary camp where people came to access flint. The absence of stone tools associated with the procuring and processing of marine resources is consistent with this hypothesis. The later stratum, however, has clear evidence of the processing of marine resources.

Pacific Period sites in Wiyot territory are described in Loud (1918), Elsasser (1965), Heizer and Elsasser (1964), Elsasser and Heizer (1966). The assemblage from HUM-67 provides the definition for the “Gunther Pattern,” but Wiyot artifacts also have characteristics that are associated with Central California rather than the Northern-associated Gunther Pattern. In the early strata of artifacts on Indian Island (dated to ca. 1000 C.E. in Elsasser and Heizer 1966), clay objects such as human figurines and cooking balls are found. Early strata also show evidence for pre-internment cremation (‘pit burning’), a practice strictly not found in more northerly areas, where burial is the norm. (In central California, however, cremation is the norm.) These archaeological characteristics give evidence for cultural distinctiveness of Wiyot and Yurok early on, and Wiyot interaction with or influence from central Californian peoples.

Archaeological evidence leads to several conclusions about the prehistory of Northwestern California. There is evidence for a major cultural shift from a generalized hunter-gatherer culture (represented by the Borax Lake Tradition) to a littoral culture with much in common with those of the Pacific Northwest (archaeologically represented by the Gunther Pattern). As in the Pacific Northwest, salmon was an important staple and was preserved. Acorns were also an important staple, and were stored as they were in other parts of California. Regional differences are readily apparent, but the archaeological record is not so detailed that good descriptions are available for all areas. It is clear, however, that assemblages in the Wiyot area show more influence from central California than other coastal assemblages. More southerly California Athapaskan areas such as Kato and Wailaki are more similar in material culture to their southern neighbors such as the Yuki than to their Athapaskan neighbors to the north, the Hupa and Chilula.

6. Conclusion and summary of following chapters

This dissertation is description of language contact among six Northwestern California languages, both in terms of linguistic effects and sociolinguistic context. Indigenous Northwestern California is a linguistically diverse area that did not have a single lingua franca or dominant language. The languages spoken in Northwestern California are diverse both genetically and typologically, though they share typological characteristics common in Western North America (such as the prevalence of head marking morphology).

Archaeological evidence, though scant in some places, consistently supports a particular migration sequence into Northwestern California. Athapaskan-speaking peoples are the most recent migrants, preceded by Algic-speaking peoples. Speakers of

Hokan languages possibly are aboriginal to California, though associations between archaeological assemblages and particular language families are shaky at such time depths.

Chapter 2 (The linguistic results of language contact in Northwestern California) surveys previous treatments of areal linguistic features in Northwestern California, and proposes new contact features, many of which are confined to two or three languages. Though areal features in Northwestern California have been considered within the context of the discussion of larger macro-areas, this is the first examination of language contact focusing specifically on Northwestern California. Contact effects are found in many components of the grammar of Northwestern California (tense and aspect marking, classifier systems, second person prominence in argument marking, loan translations, word order). Loan words and phonological convergence (two features common in linguistic areas) are largely absent. Though Northwestern California languages have undergone much contact-induced linguistic change, they retain a level of typological diversity, both in the expression of basic grammatical elements, and in the morphological expression of the contact features themselves.

Chapter 3 (The sociolinguistic context of language contact in Northwestern California) is an examination of sociolinguistic attributes of Northwestern California that can be described based on early twentieth century ethnographic records. This includes information about political organization, patterns of settlement and resource ownership, multilingualism, ethnonyms, and dialectology. Political organization was at the level of village or lineage, rather than at the level of the modern-day tribe. Resource ownership was well-defined and tied to lineages. Patterns of multilingualism were local, arising

primarily from inter-lingual marriages. Many ethnonyms are attested that do not correspond to the tribal terminology common in contemporary usage, and demonstrate diverse interpretations of ethnicity. Slight dialect differences from village to village can be recovered, that reveal ongoing phonetic changes. In each case, Northwestern California society is profoundly local. This social 'localism' provides a context for understanding the profile of contact-induced linguistic changes in Northwestern California.

In Chapter 4 (Functional convergence and the typology of language contact), I bring together the data on contact-induced linguistic change from Chapter 2, and on the sociolinguistic context from Chapter 3, since they inform our understanding of the mechanisms and results of language contact. Most studies of the social aspects of language contact are in situations of asymmetrical power relations among groups. Northwestern California, however, was an area of egalitarian relations among linguistic groups. There was no single prestigious language or lingua franca, nor was there asymmetrical bilingualism (with the exception of Chimariko speakers shifting to neighboring languages). Northwestern Californians maintained linguistic diversity during long-standing contacts with speakers of other languages. Convergent changes were at the level of semantics and pragmatics and did not result in isomorphic surface syntax.

I address the typology of Thomason and Kaufman (1988), which divides language contact into *borrowing* and *shift-induced interference*. This commonly cited typology is limited in three respects that make it inadequate for describing contact situations such as that in Northwestern California. First, this typology is most relevant for situations in which there is a politically or socially dominant language. In Northwestern California, as

in the Vaupés Basin of Amazonia and parts of Melanesia, there is a relatively egalitarian relationship among languages. Second, Thomason and Kaufman consider only one broad factor in their evaluation of sociolinguistic situations that influence the outcomes of language contact: ‘intensity’ of cultural contact. In order to better describe the sociolinguistics of language contact, this notion needs to be complicated and augmented with other relevant factors, including language attitudes, ideology and social network structure. Third, their typology is restricted to two-language contact situations. The profile of language contact in Northwestern California demonstrates that this typology cannot be extended to linguistic areas with more than two languages in contact.

Chapter 5 is a conclusion, with a discussion of open questions and topics not discussed in this thesis.

Chapter 2: The linguistic effects of language contact in Northwestern California

1 Introduction and literature review

1.1 Introduction

In this chapter I discuss the linguistic effects of language contact in Northwestern California and the status of Northwestern California as a linguistic micro-area within a larger macro-area of the Pacific Coast of North America. I refer to borrowed elements as *contact features* rather than *areal features*, since many of them are not distributed throughout the area and appear in only two or three languages.

Previous literature and proposed areal features are discussed in §1.2. Language contact in Northern and Northwestern California has been the subject of several previous studies (Dixon and Kroeber 1913b, Bright & Bright 1965, Haas 1967, 1970, 1976, Bauman & Silver 1975, Golla 1985) and discussion of Northwestern California is usually in the context of the examination of larger linguistic areas in North America (e.g. Bright and Sherzer 1976, Kinkade 2001). In Haas (1976), Northwestern California is considered part of a larger Northern California linguistic area. In this thesis, I single out Northwestern California as an object of inquiry, and examine contact features both within the context of larger macro-areas and as the effects of localized contact. There are no firm borders to the Northwestern California linguistic area. Contact features do not form a strong isogloss bundle surrounding Northwestern California languages. Shared contact features and ethnolinguistic elements (including widespread loan translations in certain

domains), however, are sufficient to coherently define Northwestern California as an area that can be considered separately from surrounding areas.

In §2 I discuss additional features that are likely the result of contact among Northwestern California languages. The features discussed in this chapter are found at all levels of grammar: phonology, morphology, syntax and lexicon. Some of the features common in Northwestern California (e.g. the presence of a glottalized consonants) are characteristic of a much wider area, while others (e.g. the development of numeral classifiers in Karuk and Hupa) are more localized.

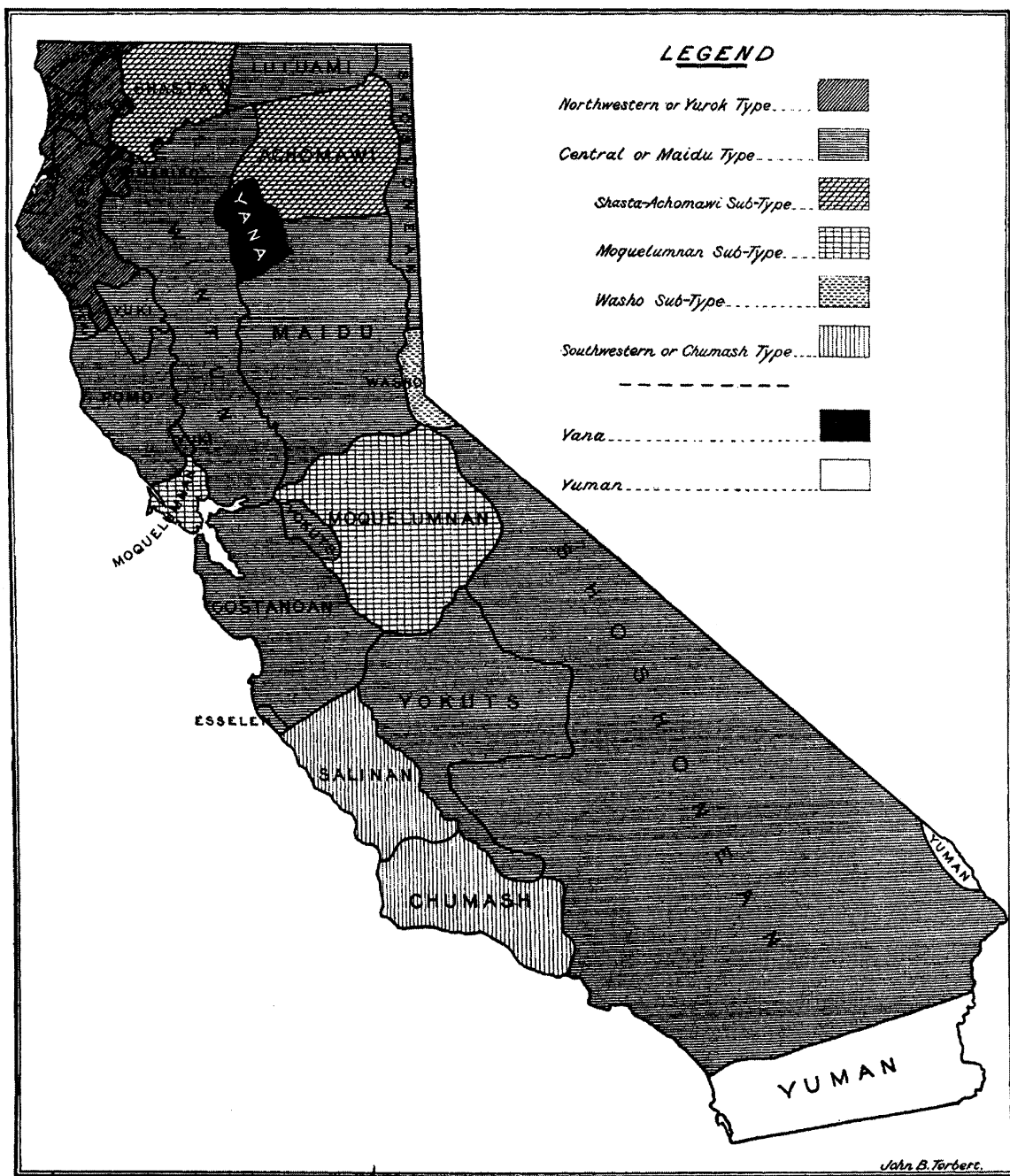
Despite longstanding contact, Northwestern California languages maintain a basic level of grammatical diversity. Comparison of the morphological expression of contact features in §3 demonstrates this diversity.

1.2 Literature review

The work of W. Bright, Golla, Haas, and Kroeber, among others, has laid much groundwork for a study of Northwestern California as a linguistic area. Kroeber's work with Dixon on the classification of Californian languages was the first to propose distinct linguistic areas (characterized by grammatical types) in California. Haas (1976) defined Northern California as a linguistic area, and included Northwestern California in this larger area. In this section I review and critique the proposed areal features that have been suggested for Northwestern California. Some of these features are discussed further in §2.

Dixon and Kroeber (1903) attempt the classification of Californian languages based on grammatical features (an approach that differs from Powell's 1891 genetic classification based on lexicon). They identify several structural types, emphasizing that "the classification that has been attempted deals only with structural resemblances, not with

definite genetic relationships; [the categories established are] not families, but types of families” (1903:2-3). Though they do not use the term *linguistic area*, which was not in common usage at that time, they are in fact identifying linguistic areas in California. Their classification is shown in Map 3. Though this classification was made at a time when there was much less documentary material available on Californian languages, and some of their terminology would be considered inexact or unscientific today, there are some insights to be gained from their typology.



Map 3: Dixon and Kroeber's typological classification of California languages

Dixon and Kroeber identify the Northwestern type, with Yurok its prototypical member¹, along with the Central type (with several sub-types), the Southwestern type and two outliers which do not fit into any type (Yana and Yuman). Both of these ‘outliers’ are Hokan families, presumably aboriginal to California. The features of the Northwestern Californian type are listed in (1).

- (1) *Dixon and Kroeber’s (1903) Northwestern Californian type*
Systematic pronominal incorporation
Total lack of a plural
Lack of syntactic case
Presence of locative and instrumental cases
Phonetics are more or less “rough and involved”

(Dixon and Kroeber 1903:18)

Of great importance in Dixon and Kroeber’s typology are the incorporation of pronouns and the presence or absence of nominal case, both characteristic of head-marking typology that is common in languages of North America. Though these features are widespread in North America, their systematic presence in Northwestern California would be indicative of a linguistic area. Given additional documentation of the grammars of Northwestern California languages, and knowledge about features inherited from proto-languages, however, the profile identified in (1) does not distinguish Northwestern California as a linguistic area in the modern sense. Instead, the areas identified by Dixon and Kroeber are ones in which a particular typological profile predominates, but not necessarily due to contact among the languages in the area.

The presence of “systematic pronominal incorporation,” for example, is an inherited feature in Algic and Athapaskan languages. Comparison with other languages within the

¹ This is representative of a Yurok-centered bias that Kroeber often demonstrates, probably due to the extended amount of time he spent working on Yurok and a personal affinity he felt for the people or culture.

respective families shows that the pronominal marking of subjects and objects on verbs is characteristic both of Proto-Algic and of Proto-Athapaskan. This is an areal feature of a large-scale area including much of Western North America.

While Dixon and Kroeber consider Yurok to be prototypical of the Northwestern California type, Yurok does not perfectly exemplify the features they identify. Yurok expresses plural for a limited group of (mostly animate) nouns. Examples of this are given in (2).

(2) *Nominal plurals in Yurok*

Singular	Plural	
<i>perey</i>	<i>pegerey</i>	'old woman'
<i>sepolah</i>	<i>segepolah</i>	'field, prairie'
<i>mewimor</i>	<i>muuwimor</i>	'old man'
<i>knuuu</i>	<i>knuuuwerehl</i>	'hawk'
<i>mewah</i>	<i>mewasegoh</i>	'boy'
<i>we'yon</i>	<i>we'yono'</i>	'girl'
<i>wr'yrs</i>	<i>wr'yrnrk</i>	'girl'
<i>-k'ep'ew</i>	<i>-k'ep'eworoh</i>	'grandchild'
<i>-me'y</i>	<i>-me'yp'or</i>	'daughter'

(Robins 1958:23)

Plural marking in Karuk is similarly found mostly in nouns denoting persons (Bright 1957:81).

As a point of clarification, when Dixon and Kroeber refer to the phonetics of Northwestern California languages being “rough and involved,” it seems that they are referring to the presence of glottalized consonants and consonant clusters. They contrast “rough” phonetics with “vocalic” and “harmonious” phonetics in central California.

In the 1950's and 1960's, linguists affiliated with the Survey of California and Other Indian Languages (UC Berkeley) sought to define the genetic and contact relationships among California Indian languages. Two of the articles of this era most relevant to the

current discussion are Haas' (1976) article on the northern California linguistic area, and Bright and Bright's (1965) investigation of the comparative semantics of taxonomy in Northwestern California. Bright and Bright, in their 1965 article, also proposed several possible morphosyntactic areal features specific to Northwestern California. Those proposals were not the focus of the article, but were suggestions, and I follow up on those suggestions by evaluating those proposed features.

Haas, in her 1976 article, described Northern California as a linguistic area and identified several linguistic features that are common in California languages north of San Francisco. This area is much larger than the Northwestern California area that is the focus of this dissertation. The features proposed in Haas (1976) are listed in (3). Many of these features have a wider distribution outside of Northern California, and I have identified their rough distribution in parentheses.

(3) *Haas' (1976) Northern California Linguistic Area*

Consonant inventory:

- Three stop series (glottalized stops common to the North)
- Uvular consonants (common to the North)
- Voiceless laterals (common to the North)
- Retroflex apical stops (common in Central California)
- Lack of l~r distinction
- Diminutive consonant symbolism (common in Western N. America)
- Diminutive affix of similar shape
- Local influences in numeral systems
- 1st person *n* and 2nd person *m* in pronouns (common in N. America)

Many of these features are common in the Northwestern California micro-area. Their distribution in Northwestern California is shown in (4):

(4) *Distribution of features from (3) in Northwestern California*

Consonant inventory:

Three stop series (Tolowa, Hupa, Chimariko)

Uvular consonants (Hupa, Chimariko)

Voiceless laterals (Tolowa, Hupa, Yurok, Wiyot)

Retroflex apical stops (Tolowa [affricate], Chimariko)

Lack of l~r distinction (Tolowa, Hupa, Karuk)

Diminutive consonant symbolism (Hupa, Yurok, Wiyot, Karuk, Chimariko)

Diminutive affix of similar shape (Hupa, Wiyot, Karuk)

Local influences in numeral systems (discussed in §2.1)

1st person *n* and 2nd person *m* in pronouns (Karuk)

The similarities in consonant inventory listed in (3,4) are characteristic both of Northwestern California, and of neighboring areas. Glottalized consonants in Yurok have been shown to be a relatively recent innovation (Blevins 2002), indicating that contact could have played a role in their development, though the source of such contact remains obscure. Diminutive consonant symbolism (described in Haas 1970 and Nichols 1971) is also characteristic of a larger macro-area of Western North America. The pronominal pattern of 1st person *n* and 2nd person *m* is not common in Northwestern California, though it is common elsewhere in North America and has been the subject of much discussion (see Nichols and Peterson 1996 and Campbell 1997:240-52). Since Karuk is the only Northwestern California language with this pattern, it cannot be considered an areal feature of the Northwestern California area.

In a second relevant article, Bright and Bright (1965) identify three areas in which Northwestern California languages show contact effects: taxonomy of flora and fauna, spatial orientation, and preliminary suggestions about morphosyntax. I refer to their work in the former two domains, and follow up on the suggestions about morphosyntax, finding that though some of them are not promising as contact features, at least one (preverbal particles marking tense and aspect) is.

(5) Yurok *tepoo* ‘fir, tree’ vs. *kaap’ehl* ‘bushy plant’
 Tolowa *č’a-me?* ‘conifer, fir’ vs. *čē-neh* ‘nonconifer, bush’
 (Bright & Bright 1965:253)

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(6) *Generic flora and fauna terms*

	Yurok	Karuk	Tolowa
'quadruped mammal'	<i>hoore'mos</i>	-----	
'fish'	<i>nunepuy</i>	-----	-----
'snake'	<i>leyes</i>	<i>ʔápsun</i>	<i>t'aayəš</i>
'bird'	<i>ch'uch'ish</i>	<i>ʔačvi-v</i>	<i>tš'eeyáš</i>
'fir tree'	<i>tepoo</i>	<i>ʔíppaha</i>	<i>tš'aaméʔ</i>
'tree'	-----		-----
'bush'	<i>kaap'ehl</i>	<i>píriš</i>	<i>tš'éeneh</i>
'grass'	<i>'rrwrh</i>		<i>xəmšən</i>
'flower'	<i>chiishep</i>	<i>ʔiθríha</i>	<i>tš'abáayuh</i>
'berry'	<i>nrhpry</i>	<i>ʔuxra·h</i>	<i>deetšíh</i>

(Bright & Bright 1965:252)

Yurok, Karuk and Tolowa share the lack of a generic category for 'insect,' 'plant,' and 'animal.' Thus, insects do not fall into any generic taxonomic category.

Bright and Bright also noted that the languages of Northwestern California share a common system of spatial terminology that refers to rivers rather than absolute cardinal directions. The four basic distinctions are 'upriver,' 'downriver,' 'towards the river/ downhill,' 'away from the river/ uphill.' This type of directional system is common in riverine areas, and is found in Alaskan languages as well. These spatial terms are often-used and well-integrated into the grammar, being used in directional verbs and adverbs. Basic directional terms are listed in (7) as adverbs, though the directional morphemes can take many forms (for example, in Yurok the morpheme *pech*- 'upriver' is found in such adverbs as *pechus*, *pechow*, *pechku*, *pechik*, and *hipech*, with meanings that involve the concept 'upriver').

(7) *Directional terms*

	Yurok	Karuk	Hupa	Chimariko
‘upriver’	<i>pechku</i>	<i>káruk</i>	<i>yinagi</i>	<i>waida</i>
‘downriver’	<i>pulekw</i>	<i>yúruk</i>	<i>yideʔi</i>	<i>wiseda</i>
‘towards the river’	<i>’oslookw</i>	<i>sáruk</i>	<i>yicinʔi</i>	unattested
‘away from the river’	<i>wonew</i>	<i>maruk</i>	<i>yidagi</i>	unattested
‘across the water’	<i>wohpew</i>	<i>iθyáruk</i>	<i>yima·ni</i>	<i>čemda</i>

(Robins 1958: lexicon, Bright 1957: lexicon, Sapir & Golla 2001: lexicon, Grekoff ms.)

Bright and Bright then mention some morphosyntactic similarities between Yurok and Karuk, which are unrelated languages, suggesting that some of these features might be areal features. These are listed in (8).

(8) *Similarities between Yurok and Karuk*

- Possessive and locative inflection of nouns
- Plurality for a limited group of nouns
- Inflection of verb forms for pronominal object as well as subject
- Use of nominalized verb forms as heads of equational sentences
- Redundant marking of plurality in verbs by an extended stem
- Use of preverbal particles to mark tense and aspect

(Bright & Bright 1965:250)

Some of these features (possessive and locative inflection of nouns, plurality for a limited group of nouns, inflection for object and subject) are similar to those in Dixon and Kroeber’s Northwestern California typological profile (the features of which are listed in 1). Two of these features (redundant marking of plurality in verbs by an extended stem, and the use of preverbal particles to mark tense and aspect) are not found in Dixon and Kroeber’s profile. Further examination of plurality marking in Yurok and Karuk shows that they are not entirely similar in morphology or in function, so this is unlikely as a contact feature. Preverbal particles are discussed further in §2.7.

In addition to being characteristic of Northwestern California languages, the features in (8) are common elsewhere in North America. As an example, Nez Perce is a language

unrelated to any of the Northwestern California languages and spoken in Idaho, has both possessive and locative inflection on nouns, and inflection of verb forms for subject and object (Aoki 1973). These features are thus best considered indicative of macro-areal trends.

The ‘redundant’ plural marking cited by Bright and Bright is possibly subject to an alternative analysis in Yurok, marking a collective type of plural rather than just a redundant plural marking.² In Yurok, some verbs with plural arguments can have a suffix *-V’m* (which Robins calls the ‘incremental plural’). Not all plural verbs are marked this way, as plural arguments can also be marked with verbal inflection, with the ‘intensive’ infix *-eg-*, or with verb stem reduplication. This plural marking may seem redundant, because it can alternate with other ways of marking the plural without any seeming semantic difference. In (9), a verb with an incremental plural with no person inflection, *sonowoo’m*, is followed in the next sentence by the same verb stem with no incremental plural and with third person plural inflection, *sonowohl*.

- (9) *Pishtu’ wit ki sonow-oo’m ’o’loolekwish’ol.*
 CONJ DEM pvp.FUT do.pl human.being(s)
- Wishtu’ ko ’o sonini wishtu’ sonow-ohl ’o’loolekwish.*
 CONJ pvp.FUT pvp.LOC be.ATTR.PL CONJ do-3pl human.being(s)

‘Human beings will do so. Human beings will act like this.’

(ALK-DJ1)³

Karuk also marks plurality of arguments with a plural morpheme, described in Bright (1957:87-8). The Karuk plural morpheme *-na·* indicates plural subjects or plural objects, while in Yurok the incremental plural applies only to subjects. In Karuk, *-na·* is optional,

² This interpretation can be attributed to Juliette Blevins.

³ See References for a description of citations to Kroeber’s unpublished texts.

so that verbs can appear with or without it, with no semantic difference. These differences in meaning and distribution indicate that plural argument marking on verbs is unlikely as a borrowing between Karuk and Yurok.

2 Further discussion of contact features

In addition to the macro-areal features proposed in Haas (1976), there are several contact features with a more local distribution within Northwestern California. In the sections that follow, I describe several of these localized areal features; some are new, and some are elaborations on previous proposals. I discuss convergent changes in numeral systems, diminutive consonant symbolism, kin term systems, repetitive reduplication, similarities in classifier systems, preverbal particles marking tense and aspect, second person prominence in argument marking, and loan translations.

2.1 Numeral systems

Haas (1976) proposed that several Northwestern California languages have undergone convergent changes in their numeral systems. Algonquian languages are for the most part quinary, while Wiyot (and according to Haas, Yurok) are decimal. Athapaskan languages are predominantly decimal. Kato, in the southern part of the range of California Athapaskan dialects, has a quinary system, suggesting influence from Hokan languages, which are also quinary.

Though Haas labels Yurok and Wiyot numerals as decimal, there are vestiges of a quinary system in Yurok, including the word for ‘six’ which is transparently related to ‘one,’ and transparent morphological analysis of the Yurok words ‘seven,’ ‘eight,’ and ‘nine’ that indicate they might be of more recent origin than 1-4. No such morphological analysis is readily apparent for Wiyot numerals. Both Yurok and Wiyot also retain a

distinctive structure for the numerals 1-4, which take classificatory suffixes, as opposed to 5-9 or 10, which are invariant in form and co-occur with a verb that takes classificatory suffixes. This is a distinction shared with Algonquian languages, suggesting it is archaic in Yurok and Wiyot. Yurok and Wiyot numerals are shown in (10), with default classificatory suffixes. The verb compounded to 5-10 is **bolded**.

(10)	Yurok	Wiyot
1	<i>ko'r</i>	<i>kucad</i>
2	<i>na'a'n</i>	<i>ditar</i>
3	<i>nahkse'n</i>	<i>dikhad</i>
4	<i>cho'one'n</i>	<i>diyo'wad</i>
5	<i>meruh choo'm</i>	<i>we'sog halad</i>
6	<i>kohcew choo'm</i>	<i>taktaluk halad</i>
7	<i>chrwrsik' choo'm</i>	<i>ho'law halad</i>
8	<i>knewetik' choo'm</i>	<i>hiwitaw halad</i>
9	<i>krrmik' choo'm</i>	<i>bašaruk halad</i>
10	<i>wrhlrwi', wehlowaa choo'm</i>	<i>daluk halad</i>

(Robins 1958:88, Teeter 1964:92)

Numerals in the Ritwan languages can be contrasted with numerals in Proto-Algonquian, where the numerals 6-8 are morphologically based on 1-3 plus a suffix (11). Rhodes and Costa (2003) reconstruct multiple forms for 'seven' and 'nine.'

(11)	Proto-Algonquian	
1	<i>*nekwetwi</i>	
2	<i>*nyi·šwi</i>	
3	<i>*neʔθwi</i>	
4	<i>*nye·wi</i>	
5	<i>*nya·θanwi</i>	
6	<i>*nekwetw-a·ši</i>	‘one-a·ši’
7	<i>*nyi·šw-a·ši</i>	‘two-a·ši’
	<i>*ta·paw-a·ši</i>	
	<i>*eθwa·hikani</i>	
8	<i>*neʔθw-a·ši</i>	‘three-a·ši’
9	<i>*ša·nka</i>	
	<i>*ča·ka</i>	
10	<i>*meta·θ</i>	

(Rhodes & Costa 2003)

In Yurok and Wiyot, the numerals 1-4 take classificatory suffixes that change depending on attributes of the object being counted. The numerals 5-9 and sometimes 10 have invariant forms that co-occur with a verb meaning ‘to be so much’ which takes the classificatory suffixes. This structure parallels that in many Algonquian languages (Goddard 1975:254).

In Yurok, there are vestiges of a quinary system. ‘Seven,’ ‘eight,’ and ‘nine’ are transparently related to words for fingers, suggesting that they might have developed recently and based on a practice of counting on one’s fingers. Compare *chrwrsik* ‘seven’ and *chrwrsrtrw* ‘index finger’; *knewetik* ‘eight’ and *knewoletew* ‘middle finger’ (< *knew-* ‘long’); *krrmik* ‘nine,’ and *krmrtrw* ‘little finger.’ In each case, the stem is followed by a suffix *-etew* in the formation of words for fingers, and *-ik* in the numerals. The final pair is obscure: it is not clear why this should be ‘little finger’ and not ‘third finger,’ nor is the alternation in vowel length clear. The first two provide a more solid comparison.

A second vestige of a quinary numeral system in Yurok is the word for ‘six,’ *kohchew*, which contains the root *koht-* ‘one’. It is possible that the *-ew* suffix is contracted from the *-etew* found in words for fingers, and that the etymology for this is ‘first finger, thumb.’ The alternative analysis is that *kohchew* consists of *koht-ew* (plus *t* → *ch* sound symbolism, with the obscure suffix *-ew*).

Thus, while Yurok has a primarily decimal system, there are vestiges of a quinary system. The change from a quinary to a decimal system might have been due to contact with Athapaskan languages, which are predominantly decimal.

2.2 Consonant symbolism and diminutive affix

The distribution of types and meanings of consonant symbolism (where the place or manner of articulation of a consonant is alternated to indicate diminutive or augmentative semantics) is well-described in Haas (1970, focusing on Northwestern California) and Nichols (1971, with information on a wider area in western North America). Berman (1986) focuses on Yurok and identifies an additional archaic alternation of *t* → *s*. Consonant symbolism is common throughout Western North America. The presence of consonant symbolism in Northwestern Californian languages reflects a macro-areal feature.

Karuk, Wiyot and Yurok all have a shift involving coronal sonorants (*l* → *r* in Wiyot and Yurok; Karuk does not distinguish *l* and *r*, and instead has *r* → *n*), and one involving a shift to *č* (*t* → *č* in Yurok and Wiyot; *θ* → *č* in Karuk). Hupa has a few additional types of shifts (see 12d), some of which involve marginal phonemes (*k*, *š*). Since these segments exist as phonemes in Yurok, Karuk and Chimariko, it is plausible that these shifts have

been influenced by the phonology of neighboring languages. In Karuk, the sound-symbolic alternation between r and n is also an allophonic alternation. This is a rare situation (Nichols 1971:838 states that symbolic alternations are usually not allophonic alternations), and may indicate that this particular alternation is a borrowing of the Yurok and Wiyot l→r. Some examples of diminutive consonant symbolism are listed in (12a-d).

- (12) a. Karuk (r→n; θ→č)
súruvara ‘hole’ *súnuvan-ač* ‘little hole’
iθári·p ‘fir tree’ *ičáni·p-ič* ‘small fir’
(Bright 1957:76-7)
- b. Wiyot (l→r; t, č→c)
pal- ‘to be flat’ *paɬ-* ‘to be little and flat’
(Teeter and Nichols 1993:132)

tak ‘spruce’ *cak-ic* ‘young spruce’
hučwoč ‘bucket basket’ *hucwoc-oc* ‘small bucket basket’
(Teeter 1964:22, 68)
- c. Yurok (l→r, t→ch, V→r)
’ne’lep ‘my hair’ *’ne’reḡ* ‘my eyebrow’
pontet ‘ashes’ *prnchrch* ‘dust’
(Robins 1958: lexicon)
- d. Hupa (W→s, š; ž→ʒ; č^w→c; č̣→c̣; g^y→g, G; k^y→k, G; ḳ^y→ḳ, q)
noWt’ah ‘I believe it’ *nošt’ah* ‘baloney!, I don’t believe it’
dilxiž ‘fawn’ *dilxiẓ̌* ‘(merely a) fawn’
(Sapir & Golla 2001:869-70)

A further similarity among Wiyot, Karuk and Hupa is that diminutive consonant symbolism co-occurs with a diminutive suffix.⁴ These suffixes are of a similar shape, each containing a voiceless alveolar or dental affricate – [ts] in Wiyot, [tʃ] in Karuk and [dz] or [dʒ] in Hupa. It is possible that harmony with the consonant of the diminutive affix triggered the development of the alternations involving shifts to these affricates in

⁴ Diminutive consonant symbolism is an Algonquian feature (see Teeter 1959, Proulx 1986).

each of the languages. Yurok has an archaic diminutive suffix (*-os*) that is not productively used, along with diminutive consonant symbolism. Yana provides a useful comparison to Northwestern California languages. Yana has diminutive consonant symbolism ($l \rightarrow n$), and a diminutive affix that triggers this symbolism. The shape of the affix, however, is entirely different from that in Northwestern California languages (*-p'a* sg., *-č'eeeki* pl.)

2.3 Repetitive reduplication

Repetitive reduplication in Yurok and Karuk is described in more detail in Garrett (2001), Wood and Garrett (2002), and Conathan and Wood (2003). Garrett (2001) describes two categories of pluractional aspect in Yurok (event-internal and event-external repetition) and relates them to aspectual distinctions in Algonquian. Conathan and Wood (2003) propose that the development of this aspectual distinction in Yurok is likely due to contact with neighboring Karuk and possibly Chimariko or other unattested Hokan languages. Karuk shares the distinction of event-internal versus event-external pluractional aspect with Yurok. Chimariko does not have an event-external pluractional, but an event-internal repetitive can be internally reconstructed. In all three languages (Yurok, Karuk and Chimariko), the event-internal repetitive is marked by verbal reduplication.

Yurok, Karuk and Chimariko share a particular type of pluractional aspect that marks internal repetition of an event. This aspect is called the *repetitive* in Cusic (1981) (13a).

- (13) a. Event-internal repetition:
 A single event on a single occasion consists of repeated internal phases
 bite > nibble, fly > flutter
- b. Event-external repetition, single occasion:
 An event or period of action is repeated on a single occasion
 keep biting, fly back and forth
- c. Event-external repetition, multiple occasions:
 Repetition on separate occasions, e.g. regularly or habitually
 bite regularly, fly frequently
- (Cusic 1981)

In terms of this typology, reduplication expresses event-internal repetition in Yurok and Karuk, contrasting with another category in each language expressing event-external repetition (types b, c in 13). There is much less data for Chimariko, but what there is suggests a similar category of event-internal repetition expressed by reduplication, though no contrasting event-external aspect is apparent.

In each of these languages, repetitive aspect is marked by partial reduplication of the verb stem. It is quite common cross-linguistically for pluractionality to be marked by reduplication. Some examples of reduplicated verbs in Yurok, Karuk and Chimariko (14-16) illustrate the semantics of this aspect. Yurok verbs are shown in their noninflected form.

(14) *Yurok repetitive reduplication*

a.	<i>hlkeroh</i>	‘to thump’	<i>hlkerhlkeroh</i>	‘to thump repeatedly’
	<i>tkekoh</i>	‘to pierce’	<i>tkektkecoh</i>	‘to keep poking’
	<i>menoot</i>	‘to pull’	<i>menomenoot</i>	‘to keep pulling’
	<i>tekws</i>	‘to cut’	<i>tekwtekws</i>	‘to cut >1 thing (or 1 thing >1 time)’
b.	<i>no’op</i>	‘to be tall, high’	<i>noono’op</i>	‘to be tall (>1 thing)’
	<i>wa’apah</i>	‘to lean’	<i>waawa’apah</i>	‘to lean (>1 thing)’
	<i>ket’ey</i>	‘to park, to moor’	<i>ket’ket’ey</i>	‘to lie (of boats)’
c.	<i>tekun-</i>	‘to be stuck together’	<i>tektekun-</i>	‘to be stuck together in several places’
	<i>pegon-</i>	‘to split (tr.)’	<i>pegpegon-</i>	‘to split in several places’

(Berman 1982a, Robins 1958: lexicon, Conathan & Wood elicitation)

The majority of Yurok verbs that form reduplicative repetitives are semelfactives, and the repetitive indicates repetition of an action within a limited period of time (14a). The repetitive also appears with a few statives, indicating multiple subjects (14b). The repetitive also can refer to limited distribution in space with a few verbs, as in (14c).

Examples of Karuk repetitive reduplication are in (15).

(15) *Karuk repetitive reduplication*

<i>ikmar</i>	‘to hit with one’s fist’	<i>ikmanmar</i>	‘to beat up’
<i>imyah-</i>	‘to breathe’	<i>imyáhyah</i>	‘to pant’
<i>ikxip</i>	‘(sg.) to fly’	<i>ikxipíxipi</i>	‘to flutter’
<i>pačnut</i>	‘to suck at’	<i>pačnutúnutu</i>	‘to nibble at’
<i>iftakan-</i>	‘to stick, adhere’	<i>iftakantákan</i>	‘to be sticky’
<i>ʔakxárap</i>	‘to scratch (once)’	<i>ʔakxarapxárap</i>	‘to scratch (repeatedly)’

(Bright 1957, lexicon)

Pluractional reduplication in Karuk is semantically very similar to that in Yurok. Examples of this reduplication in Bright (1957:90-1, and lexicon) indicate repetition of an action in a single period or as a single activity (as opposed to habitually). As Bright states:

It is added especially to stems denoting activity of a very short duration, such as the striking of a single blow; the reduplicated derivative then indicates that a relatively long stretch of time is occupied by successive repetitions of the action

(Bright 1957:90)

The Karuk reduplication is used with semelfactives ('hit' > 'beat up,' 'scratch (once)' > 'scratch (repeatedly)') and activities (like 'fly' > 'flutter,' 'breath' > 'pant,' 'suck at' > 'nibble at'), which is characteristic of event-internal repetition according to Cusic's typological study. It applies to a slightly wider range of verbs than the Yurok Repetitive, which does not include activities.

Examples of Chimariko repetitive reduplication are in (16).

(16) *Chimariko repetitive reduplication*

a.		<i>aloʔloʔ</i>	'chop, smash to pieces'
		<i>iʔakirkir</i>	'scrape' (out a kettle)
		<i>ičxekimkim</i>	'shake hands'
		<i>winini</i>	'shiver'
		<i>isuq'iwq'iw-mu</i>	'nod (in agreement)'
	<i>ko-</i>	<i>koko-</i>	'holler'
b.		<i>čʰelili</i>	'be freckled'
		<i>leṭiṭi</i>	'be spotted, freckled'

(Grekoff ms.)

Chimariko repetitive reduplication does not seem to have been productive at the time Chimariko was attested. For most verbs, only the reduplicated forms (on the right in 16) are attested, with no non-reduplicated forms. These reduplicated forms mark an event-internal repetitive aspect similar to that of Yurok and Karuk. There is also one pair attested in both a reduplicated and non-reduplicated form (*ko-* 'shout, holler (once),' *koko-* 'holler'). The Chimariko repetitive, like that of Yurok, can indicate limited spatial distribution (16b).

Yurok and Karuk share the distinction between *event-external* pluractionality and *event-internal* pluractionality. Event-internal pluractionals signal that a single event is made up of subparts (for example, a shiver is made up of several repeated sub-events that together make a single, internally complex event), while event-external pluractionals indicate repetition of an entire event, either on a single occasion or on multiple occasions. Event-external pluractionals in Yurok and Karuk are shown in (17, 18).

(17) *Yurok event-external pluractionals*

<i>chyuuk'wen-</i>	'to sit'	<i>chyeguuk'wen-</i>	'to sit often'
<i>hookwch-</i>	'to gamble'	<i>hegookwch-</i>	'to gamble regularly'
<i>kemol-</i>	'to steal'	<i>kegemol-</i>	'to be a thief'
<i>laay-</i>	'to pass'	<i>legaay-</i>	'to pass regularly'

(Robins 1958:82)

(18) *Karuk event-external pluractionals*

<i>θivrú·htih</i>	'(sg.) to be floating'	<i>θivru·hti·h-va</i>	'(pl.) to be floating'
<i>pasnápišrih</i>	'to glue down'	<i>pasnapi·šri·h-va</i>	'to glue down (pl.)'
<i>ikre·myáhiš(rih)</i>	'to start to blow'	<i>ikre·myahišrih-va</i>	'to blow off and on'
<i>taknah</i>	'to hop'	<i>takná·h-va</i>	'to play hopscotch'

(Bright 1957:92-3)

Chimariko does not share the distinction between event-internal and event-external pluractionality. The fact that the distinction between event-internal and event-external pluractionality cannot be reconstructed to Proto-Algic (see Conathan and Wood 2003) indicates that this feature is likely due to contact. It seems that Yurok developed the contrasting event-internal and event-external categories due to contact with Karuk and possibly Chimariko and other unattested languages.

2.4 Second person prominence

Person marking on verbs in several Northwestern California languages is determined by a prominence hierarchy rather than strictly by grammatical relations. In each of these

languages, second person is most prominent in this hierarchy, and is marked on the verb whether it is the subject or object. Karuk has a specific inverse suffix of a type not usually found in Hokan languages (and unusual cross-linguistically). An inverse morpheme marks clauses in which the subject is less prominent than the object, either in terms of a speech-act-participant hierarchy (with first and second persons outranking third persons) or in terms of a pragmatically determined hierarchy of discourse prominence.⁵ In the discussion that follows, the forms such as 3:1 should be read as “a clause with third person subject and first person object.”

2.4.1 Yurok

Second person prominence in Yurok is likely an archaic feature, since person hierarchies are found throughout the Algonquian family (which has a widely described inverse system). In Yurok, the passive is functionally an inverse, that is, its distribution is sensitive to a person hierarchy (in which first and second persons outrank third persons), as well as relative pragmatic prominence of third person arguments in clauses that have only third persons.

Yurok has a set of bipersonal argument markers that index subject and object. This is called the *bipersonal conjugation*, and is one of several conjugation patterns in Yurok. These suffixes are demonstrated in the partial paradigm in (19), where the inverse morpheme is bolded in (19b). Some generalizations emerge from the Yurok pattern of core argument marking that lead to the proposal of a prominence hierarchy in which first and second persons outrank third persons.

⁵ Person hierarchies in Northern California are further discussed in Conathan (2002).

(19) Yurok verb conjugation

- | | | | |
|----|-------|-----------------------|----------------|
| a. | 1:2 | <i>syaahlk-ochek'</i> | 'I kick you' |
| | 2:3 | <i>syaahlk-ose'm</i> | 'you kick her' |
| b. | 3PL:1 | <i>syaahlk-oy-ek'</i> | 'they kick me' |
| | 3:2 | <i>syaahlk-oy-e'm</i> | 'he kicks you' |

(Elicitation, Conathan, notebook 1)

First, in some inverse clauses (all forms with a third person subject and second person object, all 3:1 forms, 2:1P forms) it is obligatory to use the inverse in the bipersonal conjugation, while in others (3SG,PL:1SG) there are two alternate forms, one of which is an inverse, and one of which is a portmanteau bipersonal suffix (such as those in 19a). Second, all clauses in which the subject is third person and the object is a speech-act-participant are either obligatorily or optionally marked inverse. Third, alternations between inverse-marked forms and bipersonals occur with first person singular object. There are never these alternations with first person plural or second person objects. A full description of Yurok verbal inflection can be found in Robins (1958), and comments on hierarchical person marking can be found in Robins (1980) and Conathan (2002).

The Yurok inverse marking is complicated by the fact that the inverse forms sometimes alternate with portmanteau bipersonal morphemes. With clauses involving one third person argument and one second person argument these alternations are not possible. Clauses with a second person subject and third person object are always direct, and must be marked with a portmanteau morpheme (in the 'bipersonal conjugation'), while clauses with a third person subject and second person object are always inverse and must be marked with the inverse morpheme plus the 2nd person suffix (as in 19b). Thus, 2nd person is most prominent in this hierarchy, never permitting variation in this respect.

2.4.2 Karuk

An analysis of the Karuk inflectional suffix *-ap* as an inverse marker has been published by Macaulay (1992, 2000). Here, I give only a superficial outline of the relevant points of these publications. The most important points for current purposes are the following: 1) except for the suffix *-ap*, person-marking morphemes are all prefixes; 2) the *-ap* suffix occurs in many inverse clauses, that is, with 1st and 2nd person objects; and 3) *-ap* co-occurs with morphemes that index the underlying object in inverse clauses. Considering *-ap* an inverse marker explains the relationship between the Karuk person-marking prefixes in (20) and the discontinuous forms that occur with 1st and 2nd person objects in (21). The *-ap* suffix indicates that the person marking prefix refers to the object, not the subject of the clause. It has also been extended to some negative contexts.

(20) *Karuk singular subject marking on intransitive verbs*

Person	Mode	Singular	Plural
1	OPT	<i>kán-</i>	<i>nú-</i>
	POS	<i>ní-</i>	<i>nú-</i>
	NEG	<i>ná</i>	<i>kín-</i>
2	OPT	$\emptyset$	<i>ki·k´-</i>
	POS	<i>ʔi-</i>	<i>ku-</i>
	NEG	$\emptyset$	<i>-ap</i>
3	OPT	<i>kám</i>	<i>kun´-</i>
	POS	<i>ʔu-</i>	<i>kun´-</i>
	NEG	$\emptyset$	<i>-ap</i>

(Macaulay 1992:184)

The suffix *-ap* co-occurs with the 1st and 2nd person prefixes in (21) in the following discontinuous forms (consisting of a prefix and a suffix with the verb root intervening).

(21) *Discontinuous forms with -ap*

<i>ki-k-...-ap</i>	<i>ki-k'-...-ap</i>	<i>ʔi-...-ap</i>
1SG:2PL (NEG)	1SG:2PL (POS/OPT)	3SG:2 SG (POS/OPT)
3SG:2PL (NEG)	3SG:2PL (POS/OPT)	3PL:2SG (POS/OPT)
1PL:2PL (NEG)	1PL:2PL (POS/OPT)	
3PL:2PL (NEG)	3PL:2PL (POS/OPT)	
<i>kín-/ -ap</i>	<i>kaná-/ -ap</i>	
2SG:1PL (NEG)	2PL:1SG (NEG)	
3SG:1PL (NEG)	3PL:1SG (NEG)	
2PL:1PL (NEG)		
3PL:1PL (NEG)		
3PL:3PL (NEG)		

(Macaulay 1992:187)

The forms with *-ap* are of two types: those with second person objects, and several forms (mostly with first person objects) in the negative mode (22). In (22a, b) are two sentences illustrating the distribution of the 2nd person marker. In (22a) it refers to the subject, while in (22b), co-occurring with *-ap*, it refers to the object.

- (22) a. *hô-y ʔi-mah-tih pa=išpuka*
 where 2-find-DUR the=money
 'Where do you find the money?'

(Bright 1957:162, as cited in Macaulay 1992:195)

- b. *ʔî-m ʔô-k ke-miša ʔî-n ʔi-ʔaṽ-aviš-ap*
 outside here monster SUBJ 2-eat-FUT-INV
 'A monster outside here is going to eat you.'

(Bright 1957:172, as cited in Macaulay 1992:195)

This indicates that the suffix is primarily an inverse marker, indicating the person marking on the verb refers to the object instead of the subject. In (22a), the person marking on the verb refers to the subject. In (22b) is an inverse clause and the person marking refers to the object. The suffix *-ap* has expanded to mark some non-inverse negative clauses as well.

2.4.3 Chimariko

In Chimariko, person marking is also driven by a prominence hierarchy, but unlike the languages discussed so far, only one argument is overtly marked on a verb. A prominence hierarchy (rather than grammatical relations) determines which argument this will be. This sort of hierarchical single-argument marking is seen in other Northern Hoka languages (Shasta, Achumawi, Atsugewi), and is not uncommon in western North America.

Dixon observed that “in the first and second persons, only the subject is expressed by a pronominal affix ... (in) the third person, on the other hand, it is the object rather than the subject which is expressed by the prefix” (1910:326). That is, only one argument (that which is higher on a prominence hierarchy) is marked on the verb; in direct clauses that marking refers to the subject, and in inverse clauses that marking refers to the object. In clauses with one speech-act-participant and one third person argument, it is always the speech-act-participant argument that will be marked on the verb, whether subject or object. In the case of 2nd person, the morpheme *mi-* is identical for subject and object marking, this can be seen in (23), where the same form can mean ‘you kick him,’ or ‘he kicks you.’

- (23) *mi-mičit-ni*
2-kick-PRES
‘You kick him.’/ ‘He kicks you.’

(Dixon 1910:327)

Argument marking for Chimariko transitive verbs is summarized in (24). Though only singular forms are shown, the plural forms work similarly. The morphemes marking

clauses with 1st and 2nd person subjects are (largely) invariant, while those marking clauses with 3rd person subjects vary according to the object of the clause.

(24) *Argument marking on Chimariko transitive verbs*

OBJECT	SUBJECT		
	1s	2s	3s
	1s	<i>mi</i> (<i>me</i>)	<i>ču</i> (<i>ča</i>)
	2s	<i>i-</i>	<i>mi-</i>
	3s	<i>i-</i>	<i>hi-</i>

(Adapted from Dixon 1910:326)

For first person, two distinct prefixes are used: the active *?i-* (Dixon's *i-*) and the stative *ču-*. Generally the *?i-* morpheme is used for ergatives and for agentive intransitives, while the *ču-* morpheme is used for non-agentive intransitives (and, as is seen here, objects of inverse clauses).

2.4.4 Yana

Yana is outside the Northwestern California area, but has a prominence-driven person marking system that has much in common with that of Yurok and Karuk. This pattern of second person prominence extends beyond the Northwestern California area, and is characteristic of a larger macro-area.

Yana has an 'obligatory passive' type of inverse marking, in which logical objects that outrank logical subjects in prominence must be promoted to syntactic subject. This includes speech-act-participants and prominent third-person arguments in a narrative. A partial paradigm of the verb 'kill' is given in (25), demonstrating the prominence-based person marking.

- (25) a. 1:3 *ʔopʔdji-si-ndja* ‘I kill him/her’
 2:3 *ʔopʔdji-si-n’uma* ‘you (s) kill him/her’
- b. 1:2 *ʔapʔdji-si-wa·m’a* ‘I kill you (SG)’
 2:1 *ʔapʔdji-si-wa·dja* ‘you(s) kill me’
 3:1 *ʔapʔdji-si-wandja* ‘he/she kill(s) me’
 3:2 *ʔapʔdji-si-wan’uma* ‘he/she kill(s) you(s)’
- c. 3:3 *ʔopʔdji-si* ‘he/she kill(s) him/her’
 ʔapʔdji-si-wa ‘he/she is killed (by him/her)’⁶
 ʔapʔdji· ‘he/she is killed (by him/her)’⁷
 (Except where otherwise indicated, forms from Sapir 1922)

Inverse clauses are marked with the passive morpheme *-wa-* and ablaut of the verb stem. All forms with a first or second person logical object (patient) have both the *-wa-* morpheme and the vowel *a* in the stem. The *a* variant of the stem vowel is shared with a distinct passive, (which is seen in 25c), and the *o* variant of the stem vowel also occurs in the causative (not shown), indicating that the ablaut alternation is indicative of transitivity. This is one type of evidence that the verb is detransitivized in the inverse, that is, it is formally a passive.

The inverse and unmarked forms alternate only in clauses with two third person arguments. When there is a first or second person argument, there is no alternation between inverse and unmarked. In such cases, the verb is either obligatorily active/direct (as in 25a), or obligatorily inverse (as in 25b). Thus, this construction is functionally an inverse, and not a true passive. In the Yana hierarchy, first and second person are not

⁶ This form is from Stanley Newman’s notes on a lecture of Sapir’s (Newman 1932:14).

⁷ 3:3 passive form constructed based on Central Yana forms: *ʔamʔdji-bas-iwaʔa* ‘they are all killed’ (Sapir 1910, text 7:5), *kuʔ amʔdji·* ‘they were not killed’ (Sapir 1910, text 77:3).

ranked with respect to one another, and local clauses (1:2, 2:1) are always marked inverse.

Sapir (1922) characterized all the forms with the morpheme *-wa-* (which includes all those in 25b), as well as forms with a separate passive marked by stem ablaut and the passive morpheme *-hi* (or long final vowel), (seen in 25c) as passives, because they share an intransitive vocalism. Considering the discourse context in which *-wa-* and *-hi* occur, however, they can be differentiated. The passive *-hi* always occurs with an undifferentiated or unknown demoted agent, while the inverse does not have to. The inverse can occur with known and specific agents, if they are of lesser discourse topicality than the object.

2.5 Nominal classification

Many of the languages of western North America have classifier systems of one sort or another, and such systems are found in Wiyot, Yurok, Hupa, Tolowa and Karuk. The morphology of these systems is heterogeneous. Athapaskan languages have lexically distinct verb roots for different classes of arguments (Davidson, Elford & Hoijer 1963), while Algic languages have verbal suffixes that classify the subject or object of the verb. Regardless of the strategy used to classify arguments, several languages have developed a category for ‘houses’ or ‘built structures,’ which is cross-linguistically unusual. Some data from Yurok, Wiyot and Karuk in (26-28) illustrate their classificatory system, and the category for ‘building.’ A fuller description of Yurok and Wiyot classifiers can be found in Conathan (forthcoming).

Karuk nominal classification is morphologically expressed by sets of suppletive verb stems. Different stems are used, depending on the number, animacy and shape of the

object in a state or spatial configuration. Only stative verbs occur in these suppletive classificatory sets. Bright (1957:113) terms these *durative verbs*.

(26) *Karuk durative verbs (sg. shown, not du. or pl.)*

<i>ikriv</i>	‘to live, sit, be’
<i>θiv</i>	‘(inan.) to lie, be’
<i>ʔi·θri</i>	‘(a filled container or its contents) to sit, be’
<i>ʔi·hya</i>	‘(a long object) to stand, be’
<i>ihyárih</i>	‘(an.) to stand’
<i>iyru·hriṽ</i>	‘to lie’
<i>ikrítuṽ</i>	‘to lie in a pile’
<i>ʔi·kra</i>	‘(a house) to stand, be’

(Bright 1957:113-4)

Most of the categories (besides number and animacy, ‘filled container,’ ‘long object,’ ‘pile’) distinguished by Karuk verbs are common cross-linguistically. The category ‘house,’ however, stands out from the others, since it refers to a specific object (although plausibly could be derived from a characteristic shape) and is less common cross-linguistically.

Yurok and Wiyot have similar classificatory systems which are uniquely elaborate in Northwestern California. Algonquian languages also have a comparable classificatory system, though classifiers in Algonquian languages are much less elaborate than in the Ritwan languages. Yurok and Wiyot have classificatory suffixes that are found on verbs (and numerals, which are morphologically verbs).

(27) *Wiyot classifiers*⁸

<i>ritar</i>	‘two (generic count)’	[K ms., R 1925, T 1964]
<i>ritatk</i>	‘two spherical things ’	[R 1925, T 1964]
<i>ricack</i>	‘two small spherical things ’	[R 1925]
<i>ritok</i>	‘two long things ’	[T ms.]
<i>ritetk</i>	‘two round, flat things ’	[R 1925]
<i>rote’l</i>	‘be large (flat thing)’	[R 1925]
<i>kucapł</i>	‘one hairlike object ’	[T 1964]
<i>lun</i>	‘weave (long flexible thing)’	[T&N 1993]
<i>ritbeskir</i>	‘two pieces ’	[T ms.]
<i>ritakr</i>	‘two strips ’	[T ms.]
<i>ritabotar</i>	‘two strings of dentalia ’	[R 1925, T ms.]
<i>ritbesupo’w</i>	‘two measures of dentalia ’	[R 1925, T ms.]
<i>kucebo’n</i>	‘one fathom ’	[K ms., T&N 1993]
<i>kucawe’n</i>	‘one day ’	[T ms.]
<i>ritbe</i>	‘two days ’	[R 1925]
<i>ritabok</i>	‘two days ’	[R 1925, T&N 1993]
<i>ritatkatolakw</i>	‘two months ’	[T ms.]
<i>kuceyutoyagarak</i>	‘one year ’	[T ms., K ms.]
<i>ritbegalabagarak</i>	‘two years ’	[R 1925]
<i>ritbeluđe’l</i>	‘two years (of sea-lions) ’	[R 1925]
<i>ritoki’war</i>	‘two salmon, sturgeon ’	[T ms.]
<i>ritawokwł</i>	‘two salmon ’	[T&N 1993]
<i>ritbisetk</i>	‘two blankets ’	[R 1925]
<i>kucakołil</i>	‘one tooth ’	[T ms.]
<i>kutkošil</i>	‘one head ’	[T ms.]
<i>ritbalagata’l</i>	‘two deer in a herd ’	[R 1925]
<i>ritkle’l</i>	‘two deer lying ’	[R 1925]
<i>ritawakwłe’l</i>	‘two deerskins ’	[R 1925]
<i>rotbal</i>	‘be large (buildings)’	[R 1925, T 1964]

⁸ Sources: K = Kroeber, R = Reichard, T = Teeter, T&N = Teeter and Nichols. Note that the orthographic representation of some of these morphemes is questionable, since a) some of them are attested only once, and may have been mistranscribed, and b) some of these forms are attested only in Reichard’s material, which makes the transliteration of vowels in her (non-phonemic) orthography potentially problematic.

(28)	<i>Yurok classifiers</i> ⁹	
	<i>na'a'(n)</i>	'two (default count)' [S ms., R 1958, H ms.]
	<i>nr'r'r'y</i>	'two animals, birds ' [K 1911, S ms., R 1958, H ms.]
	<i>nahkseyhl</i>	'two human beings ' [K 1911, S ms., R 1958] ¹⁰
	<i>na'a'r</i>	'two straight things ' [R 1958, H ms.]
	<i>na'ak'</i>	'two long slender things ' [S ms., R 1958, H ms.]
	<i>cheloyk</i>	'be dry (long flexible obj.)' [R 1958]
	<i>chprnrnyk-</i>	'be long (a stream)' [R 1958]
	<i>na'ak'wo'n</i>	'two bushy things ' [R 1958]
	<i>no'oh</i>	'two round things ' [S ms., K 1911, R 1958, H ms.]
	<i>no'ok's</i>	'two flat things ' [R 1958]
	<i>nr'rpi'</i>	'two pointed objects ' [K 1911, H ms., R 1958]
	<i>kohcekin</i>	'one strand ' [H ms.]
	<i>kohtep'</i>	'one tree ' [R 1958, H ms.]
	<i>kaamop</i>	'be rough (water)' [R 1958]
	<i>na'mi</i>	'two times ' [K 1911, R 1958]
	<i>na'ay(tani)</i>	'two strings of dentalia ' [K 1911, S ms.]
	<i>na'amoy</i>	'two fathoms ' [K 1911]
	<i>na'amoyhl</i>	'two nights ' [K 1911, B]
	<i>na'eyn</i>	'two days ' [K 1911, S ms.]
	<i>na'apir</i>	'two finger joints ' ¹¹ [K 1911, R 1958]
	<i>na'amrysh</i>	'two arm's lengths ' [R 1958]
	<i>nrhksryhl</i>	'three white deerskins ' [K 1911]
	<i>nr'r'ryihl</i>	'two deerskins ' [H ms.]
	<i>na'ey(teli)</i>	'two boats ' [K 1911, R 1958, H ms.]
	<i>na'a'li</i>	'two houses ' [R 1958, H ms.]
	<i>nr'rh(kr')</i>	'two woodpecker scalps ' [K 1911, H ms.]

In addition to cross-linguistically common categories of shape ('round thing,' 'flat thing,' etc.), Yurok and Wiyot have many classifiers that refer to specific objects ('years,' 'deerskins' in Wiyot, 'boats,' 'woodpecker scalps' in Yurok. It is likely that these classifiers were a quasi-open class. Among these more specific classifiers referring to objects is a class for 'buildings,' as in Karuk classificatory verbs.

⁹ Sources: B = Berman, ed. 2001a, H = Haas, K = Kroeber, R = Robins, S = Sapir.

¹⁰ Kroeber (1911) identifies this classifier as the default or generic count.

¹¹ Length measurement for dentalium shells.

At least one other language in northern California has a classifier for buildings, Wappo. Wappo is unrelated to any of the languages I have so far discussed, and belongs to the isolated Yukian family. Wappo verbs have a bipartite derivational structure that probably was not productive when the language was recorded (Sawyer 1991). Lexical prefixes categorize objects primarily in terms of shape. As in Hupa and Karuk classificatory verbs, there is a category for filled containers, and as in Wiyot, Yurok and Karuk, there is a category for houses.

(29) *Wappo lexical prefixes*

čói·khi?	‘sitting’ (a filled container, a lamp)
kíu·khi?	‘there it is’ (railroad tracks, road that disappears in the distance)
lóm·khi?	‘sitting’ (bunches of things, pencils, sticks, potatoes, apples)
máy’el·khi?	‘standing’ (houses)
wíl·khi?	‘sitting or standing’ (a single thing sitting or standing in a spot)

(Sawyer 1991:60)

Yuki also has a similar structure; as Sawyer and Schlichter (1984:12) note, “all prefixes are members of a small class of derivational, more or less petrified, instrumentals.” Note, though, that the Wappo lexical prefixes in (29) are not instrumentals, but classifiers. They specify attributes of the shape of the subject of the verb. The structure of the classificatory verbs in Wappo is similar to an archaic structure in Karuk. Haas (1980, Macaulay 1993) internally reconstructs a bipartite stem structure in Karuk, though such a structure is not synchronically transparent.

Since the category ‘houses’ is an unusual type of classifier, it is likely that the development of this classifier in Yurok, Wiyot and Karuk is due to mutual influence. In the system of Yurok and Wiyot, this classifier does not stand out as being particularly unusual, since they have a large number of classifiers for many culturally salient items, including boats, salmon and deer. In Karuk (and also in Wappo), however, the

classificatory verbs are few in number, and other than the verb referring to houses, they all refer specifically to shapes, number and animacy that are common cross-linguistically in classificatory systems.

2.6 Numeral classifiers

Most of the Wiyot and Yurok classifiers listed in (28) occur on numerals. There are a few classifiers that are attested only on verbs, such as Yurok *-op* ‘water.’) No other language of the area has a robust numeral classifier system. There are, however, incipient or simple classifier systems in Hupa and Karuk. Both Hupa and Karuk have distinct forms for numerals that count human beings (with a suffix added to the numeral stem). Cross-linguistically, numeral classifiers universally distinguish humans as a category (Croft 1994:152), so it is reasonable to assume that this distinction would be among the first to be used in a developing numeral classifier system.

Hupa numerals are described in Golla (1996) and Sapir and Golla (2001:867). Example numerals are shown in (30). When numerals are used to count human beings, they take the suffix *-n(i)*. The form for ‘one person’ is irregular (*łiwaŋ*).

(30) *Hupa numerals*

<i>ła?</i>	‘one’	<i>łiwaŋ</i>	‘one person’
<i>nahx</i>	‘two’	<i>nahni-n</i>	‘two people’
<i>ta·q’</i>	‘three’	<i>ta·q’i-n</i>	‘three people’
<i>dɪŋk’ʷ</i>	‘four’	<i>dɪŋk’ʷi-n</i>	‘four people’

(Golla 1996:381)

The Hupa suffix *-ni* is a collective plural morpheme that is used on ethnonyms such as *yinahč’in* ‘Chimariko, lit. upstream people’ (Sapir & Golla 2001:860).

(31) *Karuk numerals*

<i>ʔáxak</i>	‘two’	<i>ʔáxak-avan</i>	‘two animate beings’
<i>kuyra·k</i>	‘three’	<i>kuyra·k-ávan</i>	‘three animate beings’
<i>pi·θva</i>	‘four’	<i>pi·θv-ávan</i>	‘four animate beings’

(Bright 1957:75)

Karuk numerals distinguish forms for counting animate beings (Bright 1957:75), demonstrated in (31). Bright suggests that the suffix *-avan* which forms numerals for animate beings may be related historically to the words *ʔávan* ‘husband,’ and *ʔávansa* ‘man.’ The suffix is not used with the numeral ‘one’ (*yíθa*).

In addition to this distinction between counting animates and non-animates, Karuk has a set of nouns that occur in compounds with numerals, and specify measurements (32), thus functioning as mensural classifiers (which specify units, amounts or measurements). Mensural classifiers are also found in Yurok and Wiyot.

(32) *Karuk mensural classifiers*

- a. *ʔaxak-ʔíkxaram*
two-night
‘two nights’
- b. *kuyrak-ʔátiva*
three-basket
‘three basket-loads’
- c. *iθá-ápxa·n*
one-hat
‘one hatful’

(Bright 1957:70)

Note that the word *ápxa·n* ‘hat’ is used as a measurement in a compound with a numeral, meaning ‘hatful.’ Karuk does not seem to have sortal classifiers (which specify attributes of the object being classified) as Wiyot and Yurok do, outside of the distinction between

animates and inanimates. The usage of these classifiers varies considerably, and they seem to have been optional.

In Hupa texts, numerals sometimes occur with mensural classifying morphemes, as in (33), though I have not made an attempt to determine how many of these constructions appear, or which ones are used most consistently.

- (33) *hayahažid taʔa-xê-l xaʔaswe-n hay to·q'*
 then one-basket.load she packed up (to the house) of fish
 'She carried back uphill a **basketload** of fish.'
- (Sapir and Golla 2001:389)

Both Karuk and Hupa have a rudimentary numeral classifier system, distinguishing numerals for counting humans or animate beings from other numerals, and creating numeral compounds that function as mensural classifiers. These categories (human, measurements) are found in the numeral classifier system of neighboring Yurok and Wiyot.

2.7 Preverbal particles

Yurok and Wiyot make extensive use of preverbal particles to mark tense, aspect, and modal categories. I do not describe Wiyot particles here, and instead focus on Yurok particles. Karuk also has a few preverbal particles, and the categories marked by Karuk particles overlap considerably with those of Yurok preverbal particles. Since other Hokan languages mark tense with verbal suffixes, it is unusual (both from an areal and a genetic perspective) that Karuk has preverbal particles marking tense and aspect. Karuk also has verbal suffixes that express tense and aspect, and these combine with preverbal particles to express more specific tense, aspect and mode meanings.

In Yurok, preverbal particles are very common, and indicate many different tense and aspect categories, as well as negative, imperative, counterfactual, and locative. These preverbal particles are usually placed immediately before the verb (as in 34a,b).

- (34) a. *ku* *chkey-ek'*
 pvp.FUT sleep-1
 'I'm going to sleep.'
 b. *'ela* *pelep-*
 pvp.PAST there.is.fighting-3
 'There was fighting there.'

(Robins 1958:99-100)

In addition to tense and aspect, preverbal particles also express adverbial meanings, and negation. Those with locative meanings are particularly common. A partial list of particles is given in (35).

(35) *Yurok preverbal particles*

<i>cho'</i>	'imperative'	<i>sela</i>	'directional'
<i>hi</i>	'around'	<i>si</i>	'would, should'
<i>ho</i>	'past'	<i>so</i>	'directional'
<i>ho</i>	'to, at'	<i>soo</i>	'thus'
<i>kesi</i>	'future, anaphoric'	<i>ni</i>	'locative'
<i>ki</i>	'future'	<i>noo</i>	'similarly'
<i>kich</i>	'perfect'	<i>nu</i>	'motion'
<i>kimi</i>	'negative future'	<i>wo</i>	'past, irrealis'
<i>kit</i>	'near future'	<i>wo'ni</i>	'progr., simultaneous'
<i>kiti</i>	'future'	<i>'ap</i>	'past, inceptive'
<i>kitkwela</i>	'still'	<i>'ela</i>	'past, locative'
<i>kito</i>	'intention, desire'	<i>'eni</i>	'all over, completely'
<i>kitu</i>	'future, andative'	<i>'eme</i>	'past, andative'
<i>ko'</i>	'past or future time'	<i>'esi</i>	'future, anaphoric'
<i>ku</i>	'future, andative'	<i>'i</i>	'locative'
<i>k'eso</i>	'apparently'	<i>'imi</i>	'negative'
<i>me</i>	'past, andative'	<i>'o</i>	'locative'
<i>mep</i>	'past, just in time'	<i>'ochkaa</i>	'present progressive'
<i>mesi</i>	'anaphoric'	<i>'ochkich</i>	'recent past'
<i>mos</i>	'negative'	<i>'u</i>	'past'
<i>nimi</i>	'negative'		

(Robins 1958:97-102)

The glosses for these particles (from Robins 1958, with some terminological modification) should be considered with some caution, since there has not been a thorough analysis of their distribution and semantics. There are several different particles with 'past' or 'future' meaning, and it is not always clear what governs the choice among them. In addition to occurring singly, these particles also occur frequently in groups of two or more, with specialized meanings.

Bright (1957:135-9) describes preverbal adverbial modifiers in Karuk. These adverbs have a fixed position before the verb, one of the few strict constraints on Karuk word order (Bright 1957:141-2). The adverbial modifiers are listed in (36), and include categories of tense and aspect, imperative, and negative, as in Yurok.

(36)	<i>čimi</i>	‘anticipative’ (used with imperative and future verb forms)
	<i>ʔip(a)</i>	‘near past’ (used principally with the past tense suffix <i>-at</i>)
	<i>mit(a)</i>	‘remote past’ (used principally with the past tense suffix <i>-at</i>)
	<i>tah</i>	‘perfective’ (includes perfect)
	<i>hum</i>	‘or’
	<i>pu...ara</i>	‘negative’
	<i>vay</i>	‘vetative’
	<i>ʔik</i>	‘obligation, necessity’

Bright (1957:135-9)

Yurok has many more preverbal particles than Karuk has. The range of meanings of the Karuk particles is similar to the range of meanings of the Yurok ones (tense, aspect, modality).

2.8 Word order

Most of the languages of Northwestern California and neighboring areas are characterized by relatively loose word order, though each language has unique details and constraints. There is, however a characteristic Northwestern California word order that is evident in narrative texts (as opposed to sentences obtained in isolation via elicitation). This word order is verb initial, with a pre-verbal focus position that contains newly introduced arguments, arguments in contrastive focus, or shift of topic from one clause to another. This description of word order is not exceptionless, but describes a trend that can account for many instances of preverbal and postverbal ordering of arguments. The postverbal position is much more variable than the preverbal position, and I do not describe it in detail here.

Verb-initial word order is common in the Algonquian family (see Dahlstrom 1994 for a description of word order in Cree), and thus is possibly archaic in the Ritwan languages. There is no reason to assume major changes due to contact with neighboring

languages, since their word order is not significantly different from that in related languages.

To illustrate the preverbal positioning of newly introduced nominal arguments, the first sentences of several texts from Robins (1958) are given in (37).

(37) a. *hikon ku 'ela hoo-le'm-oni niki chu 'o gookw*
 formerly DET pvp.PAST dwell-PL-3PL.ATTR all pvp.LOC gamble.NF

b. *kwesi ku 'o'rowi' kem 'o gook'wch'*
 and DET dove also pvp.LOC gamble.3

'Once upon a time all the **inhabitants of the earth** were gambling, and the **dove** too was gambling.'

(Florence Shaughnessy, *The Mourning Dove*, Robins 1958:155)

c. *tekwe's kohchi wit so'n ku '-uuksoh kich tegahtok*
 owl once thus do.3 DET 3-child pvp.PERF starve.INT

'Once the **owl** acted in such a way that his **children** were starving.'

(Robert Spott, *The Owl*, Robins 1958:163)

In each case in (37), a new discourse participant is marked with a preverbal noun. This is only one of the circumstances under which preverbal nouns occur, the others being roughly focus and contrast. A passage from a text further illustrates the pre-verbal versus post-verbal word order pattern.

- (38) a. *Hikon 'enumi pe'l soo mel-i',*
 once exactly big.3 pvp.THUS brush.dance.is.held-3
- b. *kwesi ku kiti 'u-mrwryk' 'iki too'm*
 and pvp.FUT pvp.fut 3-final.dance.is.held.3 pvp.ALL be.together.pl
- nu hlkiigor.*
 pvp.MOTION watch.INT.NF

'Once upon a time a very big brush dance was held, and when the final dance was about to take place everyone went to watch.'

- c. *Kwesi ku locho'm 'o ge's, Nek kem ku hlkyorkw-ek'.*
 and DET toad pvp.LOC think.3 pron.1 too pvp.FUT watch-1
 'So **the toad** thought, "**I too** will go and watch."'
- d. *Ku negenich tu' kem wi' 'o gegok'w,*
 det mouse and also there pvp.LOC go.int.3

kolo wi' nini hak'ws 'w-esek',
 it.seems pron.3 pvp.AROUND laugh.3 3-think-SG

- e. *Kwelekw soo mrmryrw-rk', Nek kem ku hlkyorkwek'.*
 well so be.good-looking-1 pron.1 also pvp.FUT watch-1

'**The mouse** was walking around there too, she was laughing around a bit, thinking, "Well, I am good looking, **I too** will go and watch."'

- f. *Kwesi kich 'ela skuykep' ku locho'm noohl*
 and pvp.PERF pvp.PAST dress.oneself.3 DET toad then
- 'o gi' ku negenich,*
 pvp.LOC say.pass.3 DET mouse

- g. *Ney, kus cho' soo new-oy-ek'?*
 EXCL how pvp.SO see-PASS-1

'**The toad** dressed herself and then said to **the mouse**, "My dear, how do I look?"'

- h. *Kwesi ye'm ku negenich,*
 and say.3 det mouse
- i. *'Iyah, ke'l kwelekw kolokwin toome'wey-e'm*
 Oh! pron.2 EMPH very have.a.broad.face-2

- j. *k'i koosi swektkeloo'wey-e'm.*
 DET all.over be.warty-2

'Then **the mouse** said, "Oh, **you** are ever so broad-faced and you are covered with warts all over."

- k. *Kwesi 'o te'no'y ku locho'm, kwesi wok 'i*
 and pvp.LOC feel.insulted.3 DET toad and there pvp.LOC
so chyuk'we'n.
 pvp.DIRECTIONAL sit-3

'**The toad** was annoyed at this, and sat down at one side.

- l. *Kwesi wi' nini noo's ku negenich.*
 and there pvp.AROUND laugh.3 DET mouse
 'The mouse went giggling around.'

(Florence Shaughnessy, *The Toad and the Mouse*, Robins 1958:165)

In the excerpt from the text in (38), there are two main participants: the toad and the mouse. When these participants are first introduced into the discourse, the nouns are preverbal (lines c-d). After first mention, full nouns appear postverbally (lines f, h, k, l). The distribution of pronouns also conforms to this generalization. Pronouns are only used for emphasis or contrast in Yurok. In this text, and in general in Yurok, pronouns appear preverbally (see lines e, i), not postverbally. The emphasis expressed by the use of the full pronoun correlates with the preverbal position.

Karuk also has relatively free word order. Bright describes "a nearly maximum freedom of word-order," with a few constraints. One constraint is that adverbial particles, discussed in §2.7, precede verbs. When two animate arguments (with verbs with a 'transpersonal theme') are expressed, the subject must precede the object (1957:134), but their positioning relative to the verb is not fixed. In texts, however, there is a similar pattern to that of Yurok. Preverbal nouns are newly introduced topics, contrastive topics,

or focused elements. As in Yurok, this pattern is not exceptionless, but represents a tendency. In (39) are the first sentences of several texts which introduce the main participant of the narrative. In each case, the noun expressing the participant is preverbal.

- (39) a. **kačakâč** ʔu-ʔe·m-hî·čva
 Blue.Jay 3-doctor-in.pretense
 ‘**Blue Jay** pretended to be a “doctor.”’
 (Mamie Offield, *Blue Jay As Doctor*, Bright 1957:222)
- b. **ʔasáxvu** ʔu·m ká·n ʔúkri·
 Turtle pron.3 there 3.dwell
 ‘**Turtle** lived there.’
 (Julia Starritt, *The Hair in the Soup*, Bright 1957:212)
- c. **pa·smá·x** yúp-ʔa·xkuniš
 Towhee red-eye
 ‘**Towhee** has red eyes.’
 (Nettie Reuben, *Why Towhee Has Red Eyes*, Bright 1957:238)
- d. **tú·s** tó·pvâ·ram
 Mockingbird PERF.ITER.go.back
 ‘**Mockingbird** went home.’
 (Nettie Reuben, *Mockingbird and Swamp Robin*, Bright 1957:244)

A short text further illustrates the pattern. In the following text, the two main participants are Eel and Sucker, and are introduced in the first line (where the nouns are preverbal).

- (40) a. **ʔakrá· čámmuxič** *xáka·n* kuníθit
 eel sucker together 3P.gamble
 ‘**Eel and Sucker** gambled together.’
- b. *čavúra* ʔu·m *ko·vúra* *tá* kunčiffič **ʔakrá· čamuxič-ʔî·n**
 finally pron.3s all.EMPH PERF he.beat.him eel sucker-SUBJ
 ‘Finally **Sucker** won everything from **Eel.**’
- c. *ko·vúra* *tó·xra·m*
 all.emph PERF.bet
 ‘He had bet everything.’

d. *kári xás ʔuppi· pá·kra·h*, “*naniʔippi tá níxra·m.*”
 then 3.say the.eel my.bones PERF(?)1.bet
 ‘And **Eel** said, “I’ll bet my bones.”’

e. *kári xás va· káru vúra ʔučíffič*
 then those too EMPH 3.win
 ‘Then he won **those** too.’

f. *víriva kumáʔi· ʔakrá· púffa·t muʔippih*
 thus eel no 3.bones
 ‘For that reason **Eel** has no bones.’

g. *kúna čámmuxič ʔu·m vúra ʔíppihar.*
 but sucker 3.pron emph bones.has
 ‘But **Sucker** is bony.’

(Mamie Offield, *Eel and Sucker*, Bright 1957:238)

In the first sentence of the text (line a), the new participants Eel and Sucker are introduced preverbally. Eel and Sucker are also expressed nominally in the second and fourth sentences, and as topical participants, are postverbal (lines b, d). In the final two clauses, Eel and Sucker are contrasted, and again appear pre-predicatively (lines f, g).

Hupa, unlike Yurok and Karuk, is conspicuous in having relatively loose word order, with verb-initial clauses common. Other Athapaskan languages tend to have verb-final word order. Some examples from Slave and Apache illustrate their SOV word order.

- (41) a. *t'eere ʔi ráreyiht'u*
 girl dog she.hit
 ‘The girl **hit** the dog.’
 b. *dzá dahehte*
 bad 1.dance
 ‘**I dance** badly.’

(Slave: Rice 1989)

- (42) a. *bùh dìyìn bánál?àh*
 deer shaman him.for.it.is.being.butchered
 'The deer **is being butchered** for the shaman.'
- b. *da?ààníí ònéé òšù*
 truly Apache I.am
 'I **am** truly Apache.'

(Western Apache: Edgerton 1963:104-5)

Given the deviance of Hupa word order compared to the rest of the Athapaskan family, it is probable that Hupa has been influenced by word order in neighboring non-Athapaskan languages, which have much looser word order than Athapaskan languages.

Some examples from texts illustrate the similarities of Hupa word order to that of Yurok and Karuk. New discourse participants or those in contrastive focus tend to be introduced in preverbal position, while those previously mentioned in the discourse (when expressed at all) tend to be postverbal. Newly introduced participants in initial sentences of texts are listed in (43).

- (43) a. *toq'i-č'w'o k'atne-hił č'idehtce to-no-η'a-din*
 Salmon's.Grandmother Timber.Robin-with were living by the ocean
 'Salmon's Grandmother and Timber Robin live together on the coast.'
 (Sam Brown, *Salmon's Grandmother and Timber Robin*, Sapir & Golla 2001:394)
- b. *mehsč'iłe-n c'isday na-sa'a-n-tag*
 Blue-flag he stayed at na-sa'a-n-tag
 'Iris lived at (the resting place called) na-sa'a-n-tag.'
 (Oscar Brown, *Iris and Panther*, Sapir & Golla 2001:405)

This pattern is not universal, but is common in the texts in Sapir and Golla (2001). In (44) is a counter-example to the trend, in which newly introduced participants are clause-final.

- (44) *čideht'e·* *xontehtaw*
 he.and.she.lived.together Coyote
 'Coyote [and Frog] lived together.'
 (Emma Frank, *Coyote and Frog*, Sapir & Golla 2001:408)

Note, however, in (44), that the author omits mention of one of the characters in the initial sentence, indicating that this sentence is not creating an entirely new discourse situation. This may explain the postverbal placement of 'Coyote.'

Beyond the initial introduction of new participants, the placement of nominal arguments throughout texts also illustrates a contrast between pre-verbal and post-verbal position, as in Yurok and Karuk. An excerpt from a text illustrates this.

- (45) a. *mina·?-dahnehsnoy-ž* *ce'ehzidi(n)-mił* *dantaŋWoʔ* *miłto·y*
 Water Dog after.a.little.while several buckets
čidiwitce·ž
 she.pounded.off.into.flour
 'It took just a short while for **Water Dog** to finish pounding (enough for)
 several cooking baskets.'
- b. *h[aya·]t* *go·-žiwol-ž* *ʔe·ŋ* *taʔ* *miłto·y-ž* *Wa·ne·*
 then Acorn Worm it.was one little.bucketful only
čicisitce·ž...
 she.pounded.off.into.flour
 'Acorn Worm, however, finished pounding only (enough for) one little
 cooking basket ...'
- [several lines skipped]
- c. *h[ayahaži]d* *q'a(d)* *kʷa·da·ne·* *yaʔtehsde·ž*
 then now to.pick.acorns they.went.off
 'Then they went off to gather acorns.'
- d. *ce'ehzidi(n)-mił* *taʔa-xe-l* *yaʔwiŋʔa·n* *mina·?-dahnehsnoy-ž*
 after.a.little.while one.bucketful she.picked.up Water Dog
 'It took a short while for **Water Dog** to pick up a full load (of acorns).'

- e. *go·-ziwol-zi* *ʔe·ʔŋ* *ʒoht-xo xehstan* *č'inine·n*
 Acorn Woman for.her.part reaching.to.the.strap she.packed.home
 'Acorn Worm, however, arrived (at camp) with a load reaching to the packstrap.'
- f. *xowan-toʔ-č'eʔitč'eʔ*
 she.kept.laughing.at.her
 '(Water Dog) kept laughing at her.'
- g. *taʔa xiʒeʔ* *žiwa·yaʔk'eʔiliW*
 all.night.long they.cracked.acorns
 'All night long they would crack acorns.'
- h. *ceʔehzidi(ŋ)-mit* *ʔahr'in* *žiwaʔaʔaW* *minaʔ-dahnehsnoy-ž*
 after.a.short.while all she.always.cracks.them Water Dog
 'It took a short while for **Water Dog** to crack all of hers.'
- i. *go·-ziwol-zi* *ʔant'eh·ye·* *q'ayʔte·-meʔ* *xeʔe·ʔileʔn*
 Acorn Worm clearly.in.view in.the.basket.platter they.always.lie.there
 'As for Acorn Worm, there would be some (cracked acorns) in view on her basket plate.'
 (Sam Brown, *Water Dog and Acorn Worm*, Sapir and Golla 2001:397-8)

In the previous discourse, Water Dog and Acorn Worm are contrasted to each other. Each time Acorn Worm is discussed in contrastive focus (i.e. in contrast to Water Dog), the name *go·-ziwol-zi* appears clause initially (lines b,e,i).

Since verb-final word order is well attested throughout the Athapaskan family, the anomalous word order in California Athapaskan languages must be an innovation, and the changes that they have undergone make it look more like their neighboring languages. This indicates that word order changes in the California Athapaskan languages are due to contact with neighboring languages.

2.9 Lexical borrowing

Despite what was apparently extensive multilingualism and cross-cultural interaction, and the distribution of language contact effects throughout the grammars of Northwestern California languages, there is very little lexical borrowing among Northwestern California languages. It is possible to positively identify about a dozen loanwords in each language, and there is no regional set of vocabulary. Loan translations are more common than outright borrowing, and are discussed in a separate section (§2.10).

Golla (ms. 1985) suggests two borrowings from Karuk to Yurok: the words for ‘manzanita berry,’ and ‘chokecherry’ (46)

(46)	Karuk	Yurok	
	<i>fa·θ</i>	<i>pyah</i>	‘manzanita berry’
	<i>pu·n</i>	<i>pu·n</i>	‘chokecherry’

(Golla ms. 1985)

Since Yurok does not have an *f* or a *θ*, the nativization of *f* to *p* and *θ* to *h* in ‘manzanita berry’ is plausible.

Golla (p.c.) has also identified a list of about thirty Tolowa terms for marine flora and fauna that are likely borrowings, since their phonology is un-Athapaskan. Of these, a few of them bear a surface resemblance to Yurok words, indicating that either they are borrowed from Yurok, or that both languages borrowed these terms from a single source. These borrowings are listed in (47).

(47) *Tolowa marine fauna terms*

	Tolowa	Yurok	
'candlefish'	<i>gwaʔra</i>	<i>kwo'ro'r</i>	
'crab'	<i>gaʔšəʃ</i>	<i>ko'ses</i>	
'pelican'	<i>taakwis</i>	<i>tokus</i>	(compare Karuk <i>tákus</i>)
'quahog'	<i>šakše</i>	<i>shekwshe</i>	
(Tolowa data from Golla, p.c.; Yurok from Robins 1958, Karuk from Bright 1957)			

The presence of loanwords in the specific domain of marine flora and fauna indicates that speakers of these languages migrated to coastal areas and encountered new flora and fauna.

2.10 Loan translations

It is far more common to find loan translations than borrowed lexemes. I use the term *loan translation* rather than *calque* because they are not necessarily isomorphic. That is, in many of these loan translations, a descriptive term seems to have been translated, without adopting the morphological structure of the source. This means that it is difficult to determine the source language for such a borrowing.

It is common for basic nouns in Northwestern California languages to be derived from verbs, and are descriptive in nature. This tendency (described in Bright 2004) is strongest in Hupa, where many “basic” vocabulary items are morphologically complex and descriptive (for example *xo'ehsday* ‘man,’ lit. ‘one who is seated’). The words for ‘mountain lion’ (48) show various attributes that are singled out in descriptive nouns. The Yurok term *keget* presumably derives from a root *ket(')*, meaning ‘flat’ (cf. *ket(')**oks* ‘be flat,’ *ket(')**oskihl* ‘a level place’), though the meaning of this derivation is obscure. The Hupa term *minim'-mił-le-diliw* describes how a mountain lion kills its victims. The Karuk term *yup-thúkir-ar* describes the mountain lion’s green eyes.

(49) *Place names*

‘Pecwan’	H	<i>q’ay?k’yside·k’e?</i>	‘mouth of milling basket creek’
	Y	<i>pekwon</i>	‘acorn pounding basket’
‘Wohkel’	H	<i>t’anč’wiŋ-k’oh-diŋ</i>	‘big pepperwood place’
	Y	<i>wohk’el</i>	‘pepperwood’

(Hupa data from Golla & O’Neill, eds. 2001, general glossary;

Yurok data from Waterman 1920)

Hupa and Yurok have similar strategies for place name formation that result in place names that mean the same thing, but are not isomorphic. Hupa place names often end in the locative suffix *-diŋ* (50a), while Yurok place names often include the locative preverbal particle or preposition *’o* (50b)

- (50) a. *me’dil-diŋ* ‘canoe place’ (village of Matilton)
xahslin-diŋ ‘where there is an eddy’ (village at Horse Linto Creek)
č’itte-l-diŋ ‘where one spreads it out’ (village on South Fork)
yik’iga-n-diŋ ‘where dogs bark (in hunting)’ (village on New River)
can-diŋ ‘buckskin apron place’ (village of Omen)
nahslin-diŋ ‘where the river meanders’ (village of Ishi Pishi)
(Sapir and Golla 2001:1005-11)
- b. *’o ket’u’l* ‘where there is a lagoon’ (Big Lagoon)
’o chaahl ‘sand place’ (village near Wohtek)
’o kneget ‘arrowhead place’ (sea-stack near the mouth of Klamath)
’o slookw ‘downhill’ (village site on Big Lagoon)
’o kweges ‘strawberry place’ (place near the mouth of Little River)
’o shyrgrysh ‘where they enter’ (rock south of Trinidad)

(Waterman 1920)

Both ways of forming place names mean ‘place where X,’ but the resulting forms are morphologically different.

2.10.2 Other loan translations

Besides place names, there are many shared loan translations among ceremonial vocabulary and among everyday vocabulary, especially flora and fauna terms.

The term for a spiritual being whose name can be roughly translated as ‘widower-across-the-ocean’ is isomorphic in Hupa and Yurok, while having a different morphological structure in Wiyot and Karuk (51). The content of the Wiyot term is slightly different from the others, meaning ‘he goes toward the ocean,’ rather than ‘across the ocean widower.’

(51) ‘Widower-across-the-ocean’

Yurok *wohpekumew*
 wohpekw-’u-mew
 across.the.ocean-3-widower

(Robins 1958: lexicon)

Hupa a. *yima·n-tiw?winyay*
 across.the.ocean-he.who.becomes.lost
 ‘he who went astray across the ocean’
 b. *yima·n-e-·k’iwaŋxoya·n*
 across.the.ocean-REL-old.man
 ‘old man who is across (the ocean)’

(Sapir & Golla 2001:994)

Karuk *iθyaruk-pθhriiv*
 across.the.water-widower
 ‘widower across the water’

(Bright 1957: lexicon)

Wiyot *dok šuʔr łák-ıł*
 toward ocean go.down-3
 ‘he who goes down toward the ocean’

(Reichard 1925:153)

The terms for ‘coyote’ in Yurok, Hupa and Karuk all contain a morpheme for ‘prairie’ (52). The Yurok term contains the sequence *sep* with the intensive infix *-eg-*. The Hupa term can be translated as ‘one who is at the prairie,’ while the Karuk term can be translated ‘prairie skulker.’

(52) ‘coyote’

Yurok	<i>segep</i> prairie.INT	cf. <i>sepolah</i> ‘prairie,’ -eg- intensive infix
		(Robins 1958: lexicon)

Hupa	<i>xonteht-taw</i> <i>xonte-l-taw-i</i> prairie-at-REL	
		(Sapir & Golla 2001:985)

Karuk	a. <i>tišrá-m</i> <i>lišku-n-tíh-an</i> prairie skulk-DUR-one.who	
	b. <i>pinhê-f</i> (unanalyzable)	
		(Bright 1957: lexicon)

The term for ‘otter’ is also a loan translation, derived from terms meaning roughly ‘fish eater’ in Yurok, Hupa and Karuk (53). This set of loan translations was noted in I. Goddard (1975:257). Karuk also has an alternate term for ‘otter’ derived from ‘the one downhill.’

(53) ‘otter’

Yurok	<i>nepe’wish-neg</i> fish-eat.INT ‘one who regularly eats fish’	
		(Robins 1958: lexicon)

Hupa	<i>ło-q’i-yiditile</i> fish/salmon-attract.it.REL ‘what is attracted by salmon’	
		(Sapir & Golla 2001:928)

- Karuk a. *ʔamvá·mva·n*
 ‘salmon eater’
 b. *pa·y sáruk*
 ‘the one downhill’

(Bright 1957: lexicon)

The term ‘ladysslipper’ is also a loan translation, meaning ‘the shoes of a spiritual being,’ in Yurok and Hupa, and ‘coyote’s shoes’ in Karuk. Golla (Sapir & Golla 2001:994) suggests that the Hupa term is a near calque of English *ladysslipper*, but the presence of similar terms in other languages suggests an earlier loan translation.

(54) ‘ladysslipper’

- Yurok *wohpekumew* ‘u-mesew
 Wohpekumew 3-shoe
 ‘Wohpekumew’s shoes’

(Robins 1958: lexicon)

- Hupa *yima·n-e·-kʷiwaŋxoya·n-doyehčʷitalʔ*
 across-who.is.there-old.man-his.shoes
 ‘the Old Man Across the Ocean’s shoes’

(Sapir & Golla 2001:993-4)

- Karuk *pihne·f-yukúkuh*
 coyote-shoe(s)
 ‘coyote shoe(s)’

(Bright 1957: lexicon)

The term for ‘dove’ in Hupa and Karuk derives from ‘summer mourner’ (54). Hupa also has an unanalyzable term for ‘dove’ (*ma·yo·*), which Golla identifies as a likely borrowing (Sapir & Golla 2001:933).

Brown generally uses such euphemisms as *taŋ-xʷa-ykʷiniw* ('in many ways - they do it') or *daxo-ʔ-a-čʰidiyaw* ('in some way - they do it').

(Sapir and Golla 2001:192, note [a])

Circumlocutory and euphemistic phrases meaning 'to die,' are listed in (56-59). Yurok also has a specific term *moyk-e*¹² 'die' reserved for spiritual beings, plants and animals, and not used with human beings.

- (56) Yurok a. *ko'l sonow-o-*
something do
'die,' lit. 'do something'

(Robins 1958:lexicon)

- b. *merkewec-e-*
die/faint
'to die, to faint'

(Robins 1958:lexicon)

- (57) Hupa a. *taŋ-xʷa-ykʷiniw*
in.many.ways-they.do.it
'they do it in many ways'

(Sapir & Golla 2001:192, note a)

- b. *daxo-ʔ-a-čʰidiyaw*
in.some way-they.did.it
'they did it in some way'

(Sapir & Golla 2001:192, note a)

- c. *hay do-niWo-n ʔa-tʰê-n*
those unlucky things they do
'those who do unlucky things (handle corpses)'

(John Shoemaker, *Medicine Formula to Purify one who has Handled a Corpse*,

Sapir & Golla 2001:331)

¹² When Yurok verb stems are cited in isolation, the final vowel indicates the inflectional class.

- d. *do·-niWoj-x^w* *ʔa·kʷit'in-diŋ*
 in a not-good way where they used to do things
 ‘...when someone did an unfortunate thing (died)’
 (Sam Brown, *A Jump Dance Sermon*, Sapir & Golla 2001:185)

- (58) Karuk a. *puyâ·hara*
 no.good
 ‘corpse’
 (Bright 1957: lexicon)

- b. *pe·rú·npu*
 ITER.house.is.vacant.DENOMINATIVE
 ‘die (pl.)’
 (Bright 1957:lexicon)

- (59) Wiyot *dakw*
 be.so
 ‘die’
 (Teeter and Nichols 1993:72)

Another common pattern of euphemism is to refer to especially dangerous animals by kinship terms. Upriver Yurok people would refer to a rattlesnake as *chul* ‘aunt,’ while downriver (where, according to Robert Spott’s account, rattlesnakes were rare) they were *hlmeyep’i’r*, a word containing the root *hlmey-* ‘bad’ (Kroeber ms., Reel 129:647, 652). In the following Yurok Rattlesnake Medicine, Amits of Kepel refers to rattlesnake as ‘my aunt’ when telling it to keep away (60).

- (60) *Noohl chi* *naagur* *’ne-tulos*
 far pvp.IMP away 1-aunt
 ‘(Go) far away, my aunt!’
 (ALK-A1)

In Karuk, a rattlesnake can be referred to as ‘my aunt’ as well. There are two terms for rattlesnake in Karuk (61).

- (61) a. *tapas-ʔápsu·n*
 real-snake
 ‘real snake’
 b. *čuxáč·va·s*
 maternal.aunt.DIM-with.connecting.relative.dead
 ‘deceased mother’s sister’

(Bright 1957: lexicon)

Bright (1957:390) reports that the term *čuxáč·va·s* is “used instead of normal *tapasʔápsu·n* to avoid offending the snake.”

Sam Brown recounts a (Hupa) story in which his maternal grandmother encountered a grizzly bear. Golla notes that the woman in the text “calls the grizzly ‘my mother’s sister’ (Wiŋq’ay’), addressing it as a relative in order to placate it. Grizzlies are supposed to resent being called by their real name (mikʷow’)” (Sapir and Golla 2001:298, note [j]).

- (62) *tiloyʔ* *Wiŋq’ayʔ*
 make.way my.mother’s.sister
 ‘Get out of the way, aunt!’ (said to a grizzly bear)
 (Sam Brown, *Power over the Grizzly Bear*, Sapir & Golla 2001:293)

The practices of taboo avoidance and euphemism led to linguistic similarities among Northwestern California languages. In some cases, the terminology is translated from one language to another, but there is no evidence that this led to significant structural calquing.

3 Grammatical diversity in Northwestern California

Much of this chapter is devoted to discussing domains in which there has been contact-induced linguistic change in Northwestern California languages, resulting in similarities not due to chance or common inheritance. It is also important to note that the structure of Northwestern California languages is in many respects very different. This diversity is apparent even in the expression of areal features. Contact-induced convergent changes do

not always lead to structural isomorphism, and Northwestern California languages have maintained their diversity despite hundreds of years of intensive cultural contact.

Though Northwestern California languages demonstrate many macro-areal trends in their consonant inventories (the presence of glottalized consonants, lateral fricatives and retroflex apical consonants), they are still diverse in this respect. Chimariko, Tolowa and Hupa have three obstruent series, Yurok and Wiyot have two, and Karuk has one. Yurok and Wiyot distinguish *l* and *r*, while Tolowa, Hupa and Karuk do not. (The status of *l* vs. *r* in Chimariko depends on the speaker, and is discussed in Chapter 3, §4.5).

While Northwestern California languages all have diminutive consonant symbolism, the actual segments involved differ from language to language, in some cases making use of distinctions not present in other languages. Karuk, for example, does not distinguish *l* and *r*, which are in a sound-symbolic relationship in Yurok and Wiyot.

Yurok and Karuk share an aspectual distinction between event-internal and event-external pluractionality. In both languages, and in Chimariko, event-internal pluractionality is expressed with partial reduplication of the verb stem. The details of this reduplication differ in each language. In Yurok, the reduplicant is a bimoraic prefix (Garrett 2001:271). In Karuk, the reduplicant is a suffix. The historical morphology of Chimariko verbs is yet to be analyzed, but the pattern looks similar to that in Karuk.

Second person prominence is expressed with a distinct affix in Yurok and Karuk, but with hierarchical single-argument marking in Chimariko.

Nominal classification is expressed with verbal suffixes in Wiyot and Yurok, and classificatory verbs in Hupa and Karuk. Hupa and Karuk have also developed numeral compounds that are akin to numeral classifiers.

Loan translations have not led to isomorphic vocabulary or phrases. In place names, a locative expression is marked primarily by a preverbal particle ('o) in Yurok, and a suffix (-*diŋ*) in Hupa.

The grammatical diversity in Northwestern California can be compared to the case of extreme grammatical convergence in the village of Kupwar, India as studied by Gumperz and Wilson (1971). People in Kupwar speak Marathi, Urdu, Telugu and Kannada and frequently make use of code-switching in day-to-day interactions. The result has been distinct local varieties of each of the languages, which contain many isomorphic constructions. Such grammatical convergence has not occurred in Northwestern California. Despite longstanding contact and many contact-induced linguistic changes, the languages remain grammatically quite distinct.

4 Conclusion

I hope to have provided a clear picture of the types of similarities due to contact in the languages of Northwestern California. I have determined that the following are characteristic features of the Northwestern California linguistic area:

- (63) Consonant inventory:
- Three stop series (Tolowa, Hupa, Chimariko)
 - Uvular consonants (Hupa, Chimariko)
 - Voiceless laterals (Tolowa, Hupa, Yurok, Wiyot)
 - Retroflex apical stops (Tolowa [affricate], Chimariko)
 - Lack of l~r distinction (Tolowa, Hupa, Karuk)¹³
 - Diminutive consonant symbolism (all)¹⁴
 - Diminutive affix of similar shape (Hupa, Wiyot, Karuk)
 - Local influences in numeral systems (discussed in Chapter 2, §2.1)
 - Similarities in directional terminology (all)
 - Repetitive reduplication (Yurok, Karuk, Chimariko)
 - Second person prominence (Yurok, Karuk, Chimariko)
 - Classifier for 'house' (Yurok, Wiyot, Karuk)
 - Numeral classifiers (Yurok, Wiyot, incipient in Karuk, Hupa)
 - Preverbal particles (Yurok, Wiyot, Karuk)
 - Verb initial word order (Yurok, Wiyot, to some extent Karuk and Hupa)
 - Frequent loan translations
 - Shared euphemisms

There has clearly been mutual influence among all the languages of the area, characterized by convergence of semantic and pragmatic categories, with diverse formal expression. In the following chapters I consider these linguistic contact features in their sociolinguistic context (Chapter 3), and in the context of the typology of language contact (Chapter 4) in order to consider the development of Northwestern California as an ethnolinguistic area, and to compare it to other types of linguistic areas.

¹³ The status of liquids in Chimariko is discussed in Chapter 3, §3.5.3.

¹⁴ "Tolowa and perhaps other nearby Athapaskan languages also show traces of the symbolism but our records of them are very scanty" (Haas 1976:362).

Chapter 3: The sociolinguistic context of language contact in Northwestern California

1 Introduction

This chapter is a profile of the sociolinguistic landscape in indigenous Northwestern California, as attested and reconstructed from early twentieth century records. Political organization and ethnic orientation were profoundly local, and there were no political entities that correspond to modern day ‘tribes’. Patterns of multilingualism are apparent both from individual family histories and ethnographic commentary. Linguistic variation, while rarely a topic of investigation in early twentieth century ethnographic and linguistic records, is partially reconstructable from a comparison of all available materials.

This description of the social context of language contact in prehistoric and early historic Northwestern California is primarily based on early twentieth century ethnographic observations (the unpublished notes of P.E. Goddard, A.L. Kroeber, C. H. Merriam, G. A. Reichard, among others), the texts of Robert Spott (e.g. Spott and Kroeber 1942, and unpublished texts recorded by Kroeber), and the memoir of Lucy Thompson (Thompson 1916). I have chosen to base this discussion solely on archival resources and not on sociolinguistic interviews with current elders. This decision is simply a matter of limiting the scope of this research, and not an evaluation of the relative merits of either method. The material in this chapter would be enriched by adding contemporary Indian perspectives. For a work that incorporates this latter approach (though on a different topic), see Buckley (2002).

My purpose here is to present a sociolinguistic profile of Northwestern California that gives the context for understanding the linguistic outcomes of language contact in that area. Much of this sociolinguistic description is necessarily incomplete, since I am relying on observations made many decades ago, by people with different aims than I have. Many aspects of the indigenous sociolinguistic practices of Northwestern California peoples are beyond the grasp of the contemporary scholar. It is, however, an important endeavor to incorporate sociolinguistic descriptions into the diachronic study of language, including the study of language contact. Historical linguists often do not consider the social context of the changes they study, even though such context is undoubtedly important in determining the spread of linguistic changes. Sociolinguistic context should be recognized as equally important whether diachronic changes are ‘internally motivated’ or ‘contact induced.’

When studying indigenous languages of Northwestern California, linguists cannot assume that the people who speak or spoke these languages formed social or political groups corresponding to currently used ethnonyms in the period before European contact. There were no political ‘tribes’ that corresponded to linguistically defined ‘languages.’ Resource ownership and rights were individual or lineage-based instead of corporate or tribal, so the mapping of ‘tribal boundaries’ is problematic. The mapping of ‘linguistic boundaries’ is likewise complicated by widespread multilingualism and, in some cases, dialect differentiation. Early field notes contain commentary by indigenous consultants that can be used to recover some of the language attitudes and definitions of ethnic and linguistic identity of early twentieth century Northwest California Indians. The way people defined ethnonyms sheds light on the relationship between language and culture in

this diverse area. These indigenous interpretations of ethnic identity and linguistic relatedness are helpful in understanding the dynamics of contact among speakers of different languages, and the linguistic results of this contact.

This chapter is organized into three main sections. In Section 2 I describe the geographic, political, and linguistic organization of Northwestern California, both as it is described in published accounts and as it can be constructed from archival records. In Section 3, I describe several aspects of the sociolinguistic situation of indigenous Northwestern California, particularly the prevalence of multilingualism, to the extent that this can be recovered. Section 4 is devoted to dialect diversity. There is significant variation in the amount of dialect diversity in different languages. Those languages spoken along major riverways tend to have lower diversity than those that are not. I identify two sound changes (one in Wiyot and one in Karuk) that early twentieth century records document and localize, and I describe additional phonetic and phonological dialect features of these and other Northwestern California languages.

2 Ethnography and political organization

As discussed in Chapter 1, Northwestern California is known as an area where extreme diversity of languages co-occurs with what some consider to be a virtual identity of culture. Kroeber's (1925) description of Karuk culture is telling. At the end of a short chapter on the Karuk, he writes:

Data are scarcely available for a fuller sketch of Karok culture. Nor is such an account necessary in the present connection. In at least ninety-five institutions out of every hundred, all that has been said of the Yurok or is on record concerning the Hupa applies identically to the Karok.

(Kroeber 1925:108)

Though there are many elements of physical and ceremonial culture that are shared across linguistic boundaries, it is of course a simplification to declare that there was a homogenous areal culture. There was, in fact, variation both within and across linguistic groups. Some of this variation is discussed in Buckley's (1989) criticism of Kroeber's Northwestern California culture area. Though my task is to investigate linguistic variation, not cultural variation, it is useful to understand the nature of shared elements of culture, in order to frame the context of language contact. I therefore present here a very brief overview of some of the elements of culture that Northwestern Californians held in common. For more detailed discussions, see Goddard (1903, Hupa), Dixon (1910, Chimariko) Loud (1918, Wiyot), Kroeber (1925, California), Harrington (1932, Karuk), Kroeber and Gifford (1949, *World Renewal in Northwestern California*), as well as the articles in Heizer, ed. (1978) and works cited therein. The following list of Northwestern California cultural traits is compiled from the work of Kroeber.

(1) Northwestern California cultural traits

Littoral adaptation

White Deerskin Dance

Salmon, and along the coast seafood, important food staple

Dug-out canoes

Plank houses

Sweat house is small, rectangular, partially underground

Geometrical ornamental carving

Dead are buried, not burned

Village is prominent

Wealth

Stratified socioeconomic classes

Slavery entered into through debt

Fines instituted for injuries or crimes

Ceremonies accompanied by formula recitation (about the origin of the ceremony)

Lack of 'guardian spirit' concept prominent elsewhere

Mythology

Culture hero is trickster and monster-destroyer

Race prior to humans responsible for current conditions on Earth

(Kroeber 1920, 1922, 1923, 1925, 1953)

While Kroeber considered these traits typical of Northwestern California, they are not universal. An archaeological investigation in a Karuk-speaking area has found semi-subterranean pit houses of a 'Californian' style rather than the 'Northwest Californian' plank house style (Chartkoff & Chartkoff 1975). In an investigation of ethnobotany in Northwestern California, Baker (1981) discovered many local differences both in which plants are used and in what function these plants have. World Renewal ceremonies had many local variations that patterned geographically regardless of linguistic boundaries (Kroeber & Gifford 1949). The Chilula, whose language was only slightly differentiated from the Hupa, made ceremonial headdresses of yellowhammer quills, of a type often found to the south in California, but not elsewhere in Northwestern California (Wallace 1978:177). While it is possible to identify many traits in common among Northwestern California peoples, any detailed investigation of these traits will reveal local variation. It

is with this hedge in mind that I refer to the common features of Northwestern California cultures.

The cultures of indigenous Northwestern California may be termed *complex hunter-gatherers*, that is, they did not have intensive agriculture (though they did manage natural resources in a way that may be termed *proto-agricultural*) but they did have some of the hallmarks of anthropological ‘complexity,’ including a relatively large population density, class stratification, economic specialization, and highly developed food storage technology. People lived in sedentary villages that were concentrated along the coast and rivers, and villages had localized economies depending on available resources. Travel to temporary camps was seasonal, in order to access site-specific resources such as acorns. Trade was common: for example, people along the coast and river would trade seafood and seaweed for acorns collected by those who lived farther inland. Salmon and acorns were harvested in great quantities, processed and stored for off-season use.

In addition to trade, ceremonial gatherings were and continue to be an important part of trans-local interaction in Northwestern California. Details and anecdotes illustrating ‘intertribal’ interaction can be found in Pilling (1978:137-8).

2.1 Population

Parts of the Pacific Coast of North America, including Northwestern California, had some of the highest indigenous population densities of the continent. Absolute estimates of the population of Northwestern California vary, but some trends are clear. Population was concentrated along the major waterways and coast, and the largest rivers (the Klamath and the Trinity) had the largest population density, while smaller rivers (such as the Mad River) had lower population density. It is likely, however, that this

characterization represents some skewing of the picture due to the locations of archaeological sites. It is more difficult to find inland sites compared to riverine sites, and there has been much less study of these inland sites. (For further overview of the archaeology of this part of California see Chapter 1, as well as Chartkoff & Chartkoff 1984, Moratto 1984 and Fagan 2003).

Though estimates about the absolute number of the indigenous population vary, it is generally agreed that the area had a high population for a non-agricultural (or proto-agricultural) economy. Cook (1956) estimated the population of indigenous Northwestern California. Cook's methods differed for each language group assessed, depending on the type of information available. He made use of ethnographic, ecological and archaeological information. For the Yurok, for example, there is ample ethnographic documentation of the location of villages and approximate number of houses in each village. There is, however, confusion as to whether all of the named houses were actually occupied, since some house sites might refer to formerly occupied houses. Cook has multiplied the number of known houses by a figure of 7.5 persons per house to obtain his estimate of 3100. Cook's figures for Northwestern California groups are listed in (2).

(2) *Indigenous population according to Cook (1956)*

Yurok:	3100
Wiyot:	3300
Karuk:	2700
Hupa:	2000
Tolowa:	2400
(None for Chimariko)	

(Cook 1956:127)

Cook's estimate for the population of the Wiyot is much higher than that of Kroeber or Loud. Kroeber (1925:116) states that the population was "perhaps 800 or not over 1,000", while Loud (1918:302) states "If asked to give an extreme figure for the native

population ... the writer would say 1,500.” Cook found, however, that when all the ethnographic attestations of villages are taken into account, the higher figure resulted. Kroeber’s and Loud’s low estimates may be the result of the devastating disruptions of the Wiyot population in the late nineteenth century. The Wiyot population was nearly decimated in an 1860 massacre, and was disenfranchised much earlier than neighboring groups, many of them having been forcibly moved from the Humboldt Bay region by the time Kroeber and Loud came to the area. All of Loud and Kroeber’s native consultants were born after this disruption began, so it is difficult to estimate Wiyot population figures from ethnographic accounts.

2.2 Resource ownership and political organization

In this section I give a brief overview of how indigenous Northwestern Californians were organized politically and ethnically, and how these units did or did not match up with linguistic units as scholars define them today.

The elaborate system of resource entitlement is a prominent feature of the Northwestern California area, and shares many elements with legal systems of the Northwest Coast of North America. In indigenous Northwestern California, houses, fishing spots, and stretches of coast were owned by individuals or lineages, and not by any corporate entity. This property could be willed, gambled, or given as payment and was not attached to a particular ‘tribe’ or political group. These rights and resources were not necessarily concentrated around a single village, but could be spread throughout a wide geographic area, as described in Pilling (1978:139, 146).

The rights and ownership of resources were well-known, and there were specific punishments for trespassing or poaching. The ethos of ownership is expressed in a text

told by Domingo of Wechpus, in which he delineates the boundaries of hunting and fishing territory near his, and describes the Yurok relationship of ‘owning,’ or ‘caring for’ the land.

(3) *Excerpt from text by Domingo Jack of Wechpus (Yurok)*

<i>Kwelekw wit skewok ki 'nekch'o', witu' ho so'n</i>	This is what I want to tell you, it was like this
<i>Numi sku'y soo ni megetohlkwi' k'i hlkehl.</i>	The land is very well taken care of (owned).
<i>Kelew poy 'i me 'ap sonowo'w.</i>	You [white people] got to be in charge.
<i>Ni yegolu' Kwelekw nimi ho megetohlkwi'</i>	You say <i>Well, it wasn't owned.</i>
<i>K'i riik'ew tu' niki ki'si megetohl.</i>	But along the river every place is owned.
<i>Niki chyu 'ok'w 'wewolek'</i>	Every place has a name,
<i>k'i chegi ni 'i'ikrhkrh [obscure] ni</i>	every place where people fish
<i>'okw 'wewolek'.</i>	has a name.
<i>Wit soo ho megetohl.</i>	So it was owned.
<i>Nimi hipurish ni me'womechok'w wish 'i nu 'wr'rkrh,</i>	One doesn't come from downstream to net fish,
<i>niki 'o srmryrh mocho kit srrhl.</i>	he'd be killed if he did.
<i>Tu' kem wi' sonowok' k'i sloowehl 'wegohku',</i>	It's also like that gathering wild oats,
<i>paas ko'lish ni nu no hoo mehl hipur.</i>	nobody should come from downstream.
<i>Kem wi' sonowok' k'i woomehl 'wohku'.</i>	It's also like that gathering acorns.
<i>Paas ko'lish ni no hohku'...</i>	Nobody should do it ...

(ALK-DJ2)

Domingo emphasizes that every place was owned and had a name, and that people had to respect this ownership or be subject to punishment. People in Northwestern California had to have been well aware of which areas were available to them to hunt, gather, or fish. Ownership of resources was securely codified, not questionable or changing from year to year. This local, individual ownership of resources is also reflected in the local level of political organization, and in ethnonyms, which are discussed in §2.3.

Though the term ‘tribelet’ is sometimes used to describe units elsewhere in California, the term is not applicable in Northwestern California, as people did not organize themselves into political entities larger than the village. Kroeber’s comments in a 1962 article are a bit dramatic, but illustrate this point:

The typical Californian triblet did not occur [in Northwestern California]. It seems to have been dissolved into separate settlements. The orientation of these peoples was individualistic rather than communal. A town or village was a cluster of houses, and equivalent families, that

happened to occupy the same site and on the whole get along together, but had no basic obligations one to the other.

(Kroeber 1962:43)

There are many instances of one village enlisting the help of another (often to settle a feud or dispute). This cooperation among different villages is not reflective of status as a 'tribelet,' however, and often occurred across linguistic boundaries. Robert Spott recounts how many Tolowa people joined with the Yurok village of 'Omen in a dispute against the village of Rek'woy, who had people from the upriver Yurok Wehlkwew and Wechpus supporting them (Spott & Kroeber 1942:188). This incident illustrates the fact that alliances were not confined to one's linguistic cohort, and the level of mobilization of allies was that of the village.

2.3 Ethnonyms

Northwestern Californians had well-defined laws and traditions about land ownership and rights to resource procurement, but territory was not strictly *ethnic* or *tribal*. These 'territories,' or 'tribes' are rather the product of ethnographer's attempts to classify and describe the peoples, languages and cultures of Northwestern California. Commentary by indigenous Northwestern California indicates that there was a wide variety of interpretations of ethnic identity, and people recognized groups that are both smaller and larger than those delineated by Kroeber's (1925) classic ethnographic overview. For example, it was common to delineate 'River Yurok' versus 'Coast Yurok', or to group 'downriver people' or 'Coast people' together, regardless of what language they spoke.

It is common in linguistic records that ethnonyms are among the vocabulary elicited. Even in very short records, ethnonyms are among the basic vocabulary considered important enough to elicit. Interestingly, no two lists of ethnonyms in the archival record

are exactly the same. Precise definitions of ethnonyms varied depending on the location of the consultant, and the purpose of the categorization. Sometimes linguistic criteria were used, sometimes geographic, and sometimes a combination of the two. I do not attempt a systematic comparison of all the ethnonyms recorded from different consultants, as I think their importance for the current topic can be understood by citing a few examples of how these ethnonyms differed from each other, and from the commonly used 'tribal' terminology.

Birdie James, a woman who was bilingual in Yurok and Wiyot and who worked with J.P. Harrington, considered herself a *nr'rnrh*, or Coast Yurok (Harrington ms., 2:9). Her mother was from Big Lagoon, within the Coastal area. Birdie clearly considered the language of her mother to be distinct from the 'Klamath,' or River Yurok, language. When asked to identify where people speak Yurok (*saa'agoh*, 'to speak Yurok'), she replied "they talk the Klamath language all the way from Weitchpec to the ocean" (Harrington ms., 2:5). She identified the Klamath River area, excluding the coastal area where her family is from, and it didn't occur to her to include the Lagoon Yurok area in her definition.

Fritz Hanson and Sylvester Donohue, Karuks of the Katimin area, defined the ethnonym *yurúkva·rara* 'Yurok, downriver people' as "Indians at Orleans and maybe below," and also noted that this could refer to Weitchpec Indians (Yurok speaking), and that the people of Happy Camp refer to those at Katimin by this name (Harrington ms., 7:592). That is, people could refer to various downriver peoples by this name, and it was not confined to speakers of the Yurok language. In the same interview, or one soon thereafter, Ben Donohue of Katimin defined *yuh?ara* as either a Requa Indian (Yurok

speaking) or a Crescent City Indian (Tolowa speaking). (In Bright's 1957 lexicon, this term is defined as 'Indian from downriver, i.e., either Yurok or Tolowa, but esp. Tolowa.') These Karuk language ethnonyms are based on spatially deictic roots (*yuʔ-*, *yuruk* - 'downriver'). The commonly used terms *Yurok* and *Karuk* derive from these Karuk roots. The usage of these directionally deictic terms is of course different than the practice of naming tribes or ethnic groups after the language they speak, as is common in twentieth century ethnography.

Amos Riley, a Wiyot speaker from Indianola, describes an additional way in which Northwestern California ethnonyms differed from twentieth century ones. He had a category for all California Athapaskan speaking peoples. In conversation with Harrington, he says, "We call the Hupa Indians the same as the Bear R[iver] and Mattole [Indians]. Call Bear [River] woman or Mattole woman or any Ath[apaskan] woman *wišošk*" (Harrington ms. 1:386). The Wiyot term *wišošk* would thus be translated 'California Athapaskan woman' for Riley, demonstrating a category smaller than 'Pacific Coast Athapaskan,' and larger than 'Hupa' or 'Mattole.'

Anecdotes such as these could be repeated at length. The details of these indigenous interpretations of ethnonyms show that there were many different ways of defining ethnic groups, and that they did not necessarily match up with those ethnic and linguistic groups we would commonly recognize today.

3 Multilingualism

Many aspects of the sociolinguistics of prehistoric Northwestern California are beyond our reach. The full extent of multilingualism in the region is impossible to establish

exactly, though self-reporting and demonstrated knowledge of multiple languages allows for a partial description. Multilingualism is for the most part the result of marriage to a spouse from another linguistic group. A child growing up in a bilingual household may learn the languages of both parents, or may spend time with other who speak a different language than the child's home village. In order to understand the dynamics of multilingualism, I describe the family history of several multilingual speakers.

Since trade, ceremonial gatherings and marriage were common among speakers of different languages, we can assume that multilingualism was common in Northwestern California. Among the Yurok it seems that linguistic exogamy was not in the majority, but was not uncommon either. Kroeber (1925:42) describes the extent of village exogamy:

The Yurok married where and whom they pleased, in the home village or outside, within their nation or abroad. The only bar was to kindred ... The smaller villages were so often composed wholly of the branches of one family that they practiced exogamy of necessity. That such exogamy had not risen to native consciousness as something desirable in itself is shown by numerous endogamous marriages in the larger towns.

(Kroeber 1925:42)

The extent of linguistic exogamy can be considered to approximate the extent of multilingualism in a particular community. Self-reporting and demonstrated knowledge give further clues to the extent of multilingualism. It is impossible to quantify exactly what proportion of the population was multilingual, in what languages, and at what level of proficiency. These sorts of details are difficult to quantify even with modern censuses and sociolinguistic interviews. One way of recovering some details of patterns of multilingualism is through the personal histories of individual consultants. Many people

were consultants for more than one language, and sometimes their personal histories reveal how they came to be multilingual.

When describing the White Deerskin Dance at Wohtek, Lucy Thompson relates that some people come from far away, and thus do not know the Klamath language or details of the dance rituals, while others were bilingual and understood the language and customs well. Those that do not speak the language well are looked after carefully so they do not violate any of the prescriptions of the ceremony, while others know the customs precisely:

[T]he upper river of Pech-ic-las [*pechikla* 'Karuk; upriver people'] comes in to the different dances with their valuables as to the line of relationship or old time friendship, and the women put in their wealth and take their places and help to cook and wait on all just the same as the Po-lick-las [*pulikla* 'River Yurok'], yet they speak a different language but are so closely mixed in marriage and so many of them speak both tongues and the whole meaning of the big dance being just the same to both that there is no mistake between them in any part of the management of the dance.

(Thompson 1918:104-5)

Wohtek is located along the Klamath in the middle of Yurok-speaking territory, not directly bordering Karuk-speaking territory. Thompson's account attests to the fact that speakers of Karuk (many of them bilingual in Yurok) would travel to the central Klamath for important events.

Robert Spott (a Yurok speaker) collaborated for many years with Kroeber (see, e.g. Spott and Kroeber 1942). Spott's family had relatives who were Tolowa. Part of Spott's family was from the most northerly Yurok town, 'Omen hipur, which was located at the mouth of Wilson Creek. Though geographically peripheral to the rest of Yurok-speaking territory, the village was considered wealthy and influential. Robert Spott's family was part Tolowa, and had many ties among the Tolowa. Some members of his family were

bilingual in Tolowa. He says of his father: “my father, who talked Tolowa, said that the formulas spoken [at dances] are like our own” (Spott & Kroeber 1942:181). Given the proximity of ’Omen Hipur to Tolowa-speaking areas, bilingualism between Yurok and Tolowa is not surprising in this area.

Mary Marshall lived at Hoopa, but was originally from Yurok-speaking territory, and spoke Yurok and Hupa. The texts recorded from Mary Marshall are of interest with regards to bilingualism and multiculturalism. She was a linguistic consultant (for Goddard, Sapir and Kroeber) for both Hupa and Yurok. At least one Hupa text she recorded (a purification formula for one who has handled a corpse in P. E. Goddard 1903:351-9) is a translation of a Yurok text. Its overall structure and themes are similar to corpse purification texts in the Yurok language, and dissimilar to a second corpse purification text recorded by Goddard. People like Mary Marshall served as translators of individually owned formulas and other texts, allowing themes and literary structures to pass from speakers of one language to another. This sort of translation is also attested in Kroeber’s notes from an interview with Lame Billy. He writes, “Med[icine] might be learned say in Karok from a friend; then would be translated into Yurok” (Kroeber ms., notebook 41:64). This pathway for the transmission of narratives and formulas is indicative of the personal advantage that multilingualism could offer. In Mary Marshall’s case, it allowed her to have access to a different type of corpse purification formula than was in common use among other Hupa speakers.

Birdie James was from a Lagoon Yurok family, and was bilingual in Yurok and Wiyot. Her Yurok is a distinct variety that probably reflects a Wiyot-influenced accent. Birdie James lived in the *Wiki* Wiyot district (Humboldt Bay), and her mother was from

the Gold Bluff (Coast Yurok) area. Mrs. James spoke Yurok and Wiyot, though seems to have been more fluent in Wiyot than Yurok.

Wiyot distinguishes aspirated and unaspirated obstruents, while the two series in Yurok are plain and glottalized. Birdie James' plain obstruents are unaspirated or slightly voiced, while those of other Yurok speakers are slightly aspirated. Harrington recorded this distinction in his careful phonetic transcription.

(4) *Birdie James' pronunciation of Yurok plain stops*

	BYA ¹	BJ	CW
'water'	pa'ah	bæ''æ	
'eel'	ke'win	gæ'wiŋ	k'æ·'wi·n
'deer'	puuk	buuk'w	buukw̥
(placename)	pekwtuhl	bækw̥duł	ḅe·kw̥de·w
'salmon'	nepuy	neḅḅuy	nepp'uy

(Harrington ms., 1:325, 2:4-15)

The data in (4) show Harrington's transcription of Birdie James' unaspirated or voiced stops in Yurok, compared to Charlie Williams, a Yurok speaker. It seems that Birdie James pronounces Yurok plain stops identically to Wiyot unaspirated stops. In the data in (4), Harrington records a voiced stop for Birdie James corresponding to an aspirated stop ('eel') or voiceless stop ('deer,' 'Pekwtuhl') for Mr. Williams, and a voiceless stop for Birdie James corresponding to an aspirated stop for Mr. Williams ('salmon').

There are many other people who serve as consultants for multiple languages, but for whom no personal history information is available. For example, in September 1901, Kroeber recorded word lists in Karuk, Shasta and Tolowa from Martha Horn of Orleans. It seems from the data recorded that Karuk was her first language, Shasta a language she

¹ Berkeley Yurok Alphabet

knew well, and Tolowa a language she knew only a little of. Yet there is no indication of how she knew each of these languages.

Many of the Chimariko speakers on record were bilingual in another language, either Hupa, Shasta or Wintu. Excepting Polly Dyer and Sally Noble, other speakers were not Chimariko-dominant, and this seems to be illustrative of a trend to shift from Chimariko to other indigenous languages (and later, to English).

Not only were there bilingual individuals, but there were also particular areas where the instance of bilingualism was high enough that the area would be recognized as such. Francisco Capitán, a Karuk speaker of Happy Camp, identifies two such areas: "From Redcap down they talk 2 langs. [Yurok and Karuk –LJC], just like from Happy Camp up [Shasta and Karuk – LJC]" (Harrington ms. 8:720). This sort of widespread multilingualism led to blurry ethnographic boundaries, and is possibly the mechanism for language spread in some areas. There is no indication that Yurok, Karuk or Shasta were spreading via this bilingualism, but Chimariko was contracting in this manner, as speakers of Chimariko shifted to neighboring languages Hupa and Wintu.

Reactions from native informants to anthropologists attempting to determine cultural boundaries demonstrate the blurriness of ethnic or linguistic boundaries, as in John Sherman's designation of the boundary of Wiyot territory. Sherman told Kroeber that his language (Wiyot) was spoken in a larger area than that which Kroeber considered 'Wiyot territory':

[John Sherman] extends [the territory of the Wiyot] people farther up the river than anyone else: nearly to Larrabee instead of a little below Scotia. This is not necessarily incorrect because he was specifying in terms of 'our language,' and it is probable that the Athabascans from Scotia to Larrabee were sufficiently in contact with the Wiyot, and intermarried with them, to be largely bilingual ... most of the inhabitants are likely to

have known both languages, like the Karok-Shasta on the Klamath between Happy Camp and Hamburg

(Nomland and Kroeber 1936:39-40).

Spott also indirectly refers to such a bilingual community in his narrative entitled *Fight with the Kerometsä* (Spott & Kroeber 1942:200-2). He describes the *Kerometsä* people as follows:

[They] are Indians who live upriver so far that their country has sugar and digger pines instead of firs. Their name is said to refer to these pines [cf. *keromecha* 'sugar pine tree']. They live above Okônile'ł [Clear Creek] and understand Karok but speak it brokenly. It is said that they talk like swallows.

(Robert Spott, *Fight with the Kerometsä*, Spott & Kroeber 1942:200)

The population Spott is describing is likely one whose predominant language is Shasta, but who understand and use Karuk as well.

A different type of resource on the extent of multilingualism is Waterman and Kroeber's (1934) study of Yurok marriages. Though multilingualism is not directly addressed in this study, they make careful note of the village of origin of each party in the marriages they document. Interestingly, they find a fairly low proportion of 'intertribal' marriages, and a propensity to marry within neighboring villages. This may be because brides from afar were highly valued, and had a higher bride price than brides who lived closer. For those that live nearby to speakers of another language, though, difference of language is no barrier to marriage. By this mechanism, adjacent villages with different predominant or emblematic languages end up having a high incidence of bilingualism.

The fact that difference of language is no barrier to marriage is illustrated with yet another excerpt from Spott's *Yurok Narratives*. In this excerpt, Spott is explaining the name of a man who is married to a Wiyot woman:

The young [Wiyot] wife [of a man from Weitspus] was called Sohtsu-'onos [lit. 'married into *Sohchu*'] because she was married there. Her husband at first was called Weyo'-owa' [lit. 'married someone from *Weyo*'] because his wife was from that town, and he used to say he did not know what he should properly be called. In time his wife learned to talk Yurok and said that the name of her house was rûtsik'; so after that her husband was called Rûtsik'-owa'. Rûtsik' is not a word in our language. ... rûtsik' must be the Weyet name of the house.

(Robert Spott, *The Wiyot Obsidian Dowry*, Spott & Kroeber 1942:210)

This process of naming that the husband of the Wiyot woman went through obviously indicates that the two people could not communicate well at first. In time, the woman learned Yurok.

Records that are available indicate that multilingualism in indigenous Northwestern California was common, and that certain areas had a higher proportion of multilingual people than others, such that discrete linguistic boundaries can be difficult to determine.

4 Dialect variation

On a macro level, there is a very high degree of linguistic diversity in Northwestern California. At the level of language, however, the degree of internal differentiation differs dramatically among languages or groups of languages. The Pacific Coast Athapaskan languages are highly divergent compared to other Athapaskan languages. Internal differentiation is fairly limited in Hupa/Chilula/Whilkut, which contrasts with a dialect chain in the Southern California Athapaskan dialects (Mattole, Lassik, Sinkyone, Nongatl), which differ from each other more than Hupa/Chilula/Whilkut.

Yurok has dialects that are very shallowly differentiated – several phonological and semantic features can be identified that distinguish Coast or Lagoon Yurok from the Yurok of the Klamath River, while River Yurok had only slight internal differentiation. Garrett (2002) has described the features of Lagoon Yurok, while Quinby (2003)

investigated internal differentiation of River Yurok. The account here is based largely on their work.

Wiyot also had several dialects that can be distinguished phonologically. Wiyot dialects were severely disrupted by events of the American period, but a few dialect features are distinguishable. Wiyot dialects have not been previously investigated, and thus the section on Wiyot is longer and more detailed. I make use of the records of Merriam, Reichard, Kroeber, and Harrington to describe phonological and lexical differentiation among three distinct geographic areas where Wiyot was spoken.

Karuk records show substantial phonological variation, but it has proven possible to definitively associate only one feature ($s > \theta$) with a particular geographic area. The change of s to θ originated upriver, and spread downriver within the last century or so. It is also possible that Karuk speakers who lived off the Klamath River (either inland or along tributaries) had distinct dialects, but this is unattested.

Examination of available data on linguistic change in progress during the first half of the twentieth century supports a downriver flow of innovation along the Klamath River. Like the $s > \theta$ change in Karuk, several innovations in Yurok spread downriver from Wechpus (Quinby 2003).

Observations about Chimariko dialects are highly speculative, since many of the Chimariko consultants were not entirely fluent in the language. One consultant, for example, often used the English plural morpheme *-s* in her Chimariko (while Chimariko does not mark plurality on nouns).

- | | | | | |
|-----|-----------------|---------|------------------|---------------|
| (5) | <i>Trah-wel</i> | ‘trout’ | <i>Trah-wels</i> | ‘many fishes’ |
| | <i>Ah-wah</i> | ‘house’ | <i>Ah-wahs</i> | ‘many houses’ |
| | <i>At-trah</i> | ‘tree’ | <i>At-tras</i> | ‘many trees’ |

(Merriam ms., 35:58)

I offer some data and speculations about Chimariko dialectology, following up on the suggestions of Berman (Berman, ed. 2001b) and Grekoff (ms.). Chimariko speakers lived in geographically distinct areas, and were not all concentrated along a single river. It would therefore not be surprising if the northern and southern Chimariko speakers had distinct dialects. Conclusions regarding this must remain speculative.

This overview of dialectology is confined to comparative phonology and lexicon. Surely many observations could be made regarding comparative syntax as well. The distribution of dialect differentiation reflects both geographic and sociolinguistic factors. Along major rivers, there were not well-developed dialect distinctions, though there were slight differences from one village to the next that indicate an intensely local series of speech communities. When not located along a river, languages have more internal differentiation (as evidenced by the series of Athapaskan dialects, or the difference between River and Lagoon Yurok).

4.1 Wiyot

Wiyot had many fewer speakers than Yurok, Karuk or Hupa when it was attested, and therefore variation among speakers is particularly difficult to interpret. By the time Wiyot was documented, earlier settlement patterns had already been drastically altered, and if there were clear-cut dialects, they would have been subject to mixing, leveling or obsolescence. It is, however, possible to recover some aspects of variation that are the likely correlates of earlier dialect areas. Wiyot was spoken as a native language in three

geographically defined ‘districts’ that had separate designations in the Wiyot language. The Eel river, or *Wiyot* district is the southernmost, and had Wiyot villages from the mouth of the river approximately up to the confluence with the Van Duzen River, where the population began to be predominantly Athapaskan-speaking. The second district is *Wiki*, or Humboldt Bay, which included the island of *Tolowot* (today also called ‘Indian Island’ or ‘Gunther’s Island’), which was the site of the most prominent annual dance in Wiyot territory, and also the site of the 1860 massacre that devastated the Wiyot population.² The third district is *Patawat* or Mad River, north of Humboldt Bay, where there were Wiyot villages approximately as far upstream as Blue Lake, after which Whilkut Athapaskan was predominant. Certainly there were Wiyot speakers in other places as well, due to population mobility. Since these districts were distinct geographically, and identified by distinct ethnonyms, it is reasonable to look for dialect distinctions in each of these areas. Unfortunately for this purpose, settlement patterns were so disrupted in the late 19th century that it is sometimes difficult to determine what ‘dialect area’ a particular person might represent. It was common for a person to grow up in a different district than his or her parents, or to have caregivers from more than one district. Certainly a great deal of this mobility can be attributed to European-American-era disruption (since ca. 1850). For example, the entire population of Eel River was displaced when the government denied them their right to fish on the Eel River (for the sake of commercial fisheries). Many people were moved to Table Bluff, the site of the current Table Bluff Reservation.

² The Wiyot tribe is currently raising money to buy this sacred site and clean it up so it can be used for ceremonies once again.

Among those who documented Wiyot, Reichard was in the best position to document dialect diversity. She spent a fair amount of time in the Wiyot area at a time when there were still many fluent speakers. She describes a large amount of variation among speakers, especially in vowel qualities. In her grammar (1925) Reichard refers to regional and inter-familial variation that might be indicative of dialect differences:

Speech habits among Wiyot individuals, or rather families, differ so much as to become almost dialectic. Broadly speaking, certain peculiarities characterize the three main districts, namely, Humboldt bay, Mad river, and Eel river. But even within these districts separate families have established differences which, if not checked by others, cause certain features to be very elusive.

(Reichard 1925:8)

Though Reichard never systematically investigated Wiyot dialects, her field notes provide the records necessary to do this. Since villages were largely centered around one or two patrilineal families, it is possible that the seemingly idiosyncratic variation among different families that Reichard observed is due to earlier dialect differentiation. As discussed in §2, property rights and political organization were oriented toward families or lineages, not toward regions or linguistic units. Small villages would be dominated by or largely synonymous with a single family (as discussed by Kroeber 1925:42), so it might be expected that dialect variation would correlate with both familial and village units.

Comments by native speakers give another indication that Wiyot might have been differentiated into different dialects. In conversation with J. P. Harrington, Birdie James (of Humboldt Bay) commented: “[The] Eel River language is in some words different from ours” (Harrington ms. 1:353). Amos Riley (of Eel River) added, “They use various

slight dialects on the coast, but they all understand one another, the same as we do here” (Harrington ms., 1:384).

4.1.1 Lexicon

Because of the sparseness of documentation of the Wiyot language, lexical differences cannot always be ascribed to dialect differences. Most of the time such differences are the result of the documentation context. Explicit commentary or comparison of two speakers does, however, provide evidence for lexical differentiation among varieties of Wiyot, although these are not numerous. Reichard alludes to many dialectal lexical differences, and lists one in her grammar. In Humboldt Bay, the verb *wičaš-* is used to mean ‘to fish for mussels,’ while in Eel River, the verb *chon-* would be used (Reichard 1925:8). The latter word is related to the noun *chod* ‘mussels,’ with a regular morphophonemic alternation between *d* and *n*.

Birdie James (who lived at Humboldt Bay) and Amos Riley (from Eel River) in their conversation with J.P. Harrington describe some lexical differences between the Eel River dialect and the Humboldt Bay dialect. For example, Mr. Riley used the term *me’rwogatsg* for ‘chub salmon,’ while Mrs. James used *gu-sgidz̥ir* (Harrington ms. Reel 1:353).

4.1.2 Vowel quality

Besides lexical differences, there is a large amount of phonetic variation among speakers of Wiyot. Some of this variation has systematic geographic distribution. One such phonetic feature is the pronunciation of the vowel /i/. In Teeter’s orthography, this vowel is written <i>, and in the speech of Della Prince, his principal consultant, varies between

[i] and a somewhat lower [e]. Teeter (1964:14) describes this vowel as “a lower-high unrounded front vowel” with “a relatively wide range of free variation.” Earlier records indicate that some speakers consistently had [i] for this vowel, others consistently had [e], and for others the vowel quality varied. This distinction is not clear from Reichard’s grammar, since she draws on the speech of several speakers without necessarily distinguishing them. Her field notes, however, indicate that the lowered variant of this vowel can be associated with the Eel River dialect area, while the higher variant can be associated with the Humboldt Bay dialect area. Data to support this is given in Tables 1-2. I show several basic vocabulary words as they are transcribed phonetically for six different speakers and one group of undifferentiated speakers. Note that Teeter’s transcription is phonemic; all others are roughly phonetic. In Merriam’s transcription system, both <e> and <ē> represent [i], and long vowels are orthographically doubled. Jerry James of Humboldt Bay is represented in two different sources – Merriam and Reichard. For comparison, I also show these words in Teeter’s phonemic orthography that does not necessarily indicate the phonetic quality of the vowel.

Table 1: *Pronunciation of the vowel /i/ by Wiyot speakers from Humboldt Bay and mouth of Mad River*

	KVT: DP	CHM: JJ	GAR: JJ	ALK: BK	ALK: M
‘alder’	wit				
‘ashes’	bacawitk	wet-so-weetk			
‘coyote’	witkoł		witgał		
‘June bug’	khitkaš	keet-kus			
‘knife’	pumipa’l		bumɛpəl	bumipal	
‘louse’	hikw	he-kw		hikw (GAR)	
‘mortar’	pitw	peet-hoo			bīt ^u h
‘no’	kiyowl		giyau ^w		
‘smoke’	bi’war			bī’vur	
‘two’	ritar		rīt-		rīter ⁱ
‘three’	rikhar		rik-		rikêr
‘tongue’	bit	a-vēt			mīt
‘whale’	khimak			kīmak	
‘white man’	tikwo’	te-kwah			ūkwā’ ^a

In Table 1 is data from two speakers from the Humboldt Bay area, Jerry James and his wife Birdie James, followed by one speaker who lived at mouth of Mad River – Mary, aunt of Jerry James. These speakers tend to have the [i] pronunciation of this vowel, though there are sporadic exceptions – for example Jerry James, in the word for ‘knife’ says [pumɛpal] rather than [pumipal].

Table 2: Pronunciation of the vowel /i/ by Wiyot speakers from Eel River

	KVT: DP	CHM:ER	GAR: WB	GAR: B	GAR: S
‘alder’	wit			we·t	
‘ashes’	bacawitk	wet-so-wātk			bətsawetk
‘coyote’	witkoł				welgoł
‘hat’	ki’y		Ge’		
‘June bug’	khitkaš	kāt-kus			
‘knife’	pumipa’l		BumεBil	bumεBe’l	bumεbel
‘louse’	hikw	hā ^{kw}		hek ^w	hek ^w
‘mortar’	pitw	pāt-hoo		bet ^w	betw
‘no’	kiyowl		Ge·ya		
‘smoke’	bi’war			vewar	βewar
‘two’	ritar	er-rā-ter			
‘three’	rikhar	er-rā-ker			
‘tongue’	bit	vāt		re·t ³	
‘whale’	khimak		ke·māk ⁴	kemāk	
‘white man’	tikwo’	tā-kwah ^w	degwa’		degwa’

The data in Table 2 is from three people from the Eel River area, along with data from Merriam’s Eel River wordlist, which was obtained from three people – Bill Brainerd, his wife, and Sarah McGuire. These speakers have a lower variant of the vowel.

4.1.3 Free variation of b ~ m

The pronunciation of /β/ () word initially also patterns geographically. Both Reichard and Teeter noted that [β] and [m] are in free variation word initially, and Reichard attributed the presence of [m] to younger speakers:

³ *re·t* ‘my tongue’

⁴ In the toponym *dake·māk* which is translated ‘petrified whale’.

The bilabials b, w, v, and m are often confused, especially the last two. This is due to the fact that v is very carelessly spoken by many of the Wiyot, particularly the younger English-speaking members of the tribe. They usually substitute m for this sound; but it is generally possible, with a little care, to differentiate between v, m, and w when talking with the older people who speak the language well.

(Reichard 1925:9)

Reichard's comments would indicate that this free variation was relatively new at the time she was documenting the language, but I find that the earliest records of Wiyot show that [β] and [m] were in free variation, or that [m] predominated, even in the mid-nineteenth century. Instead of being a relatively new change in the 1920 of β > m, this was a change of m > β. Comparison with Yurok shows that this bilabial fricative is cognate with a nasal, as shown in cognates in (6).

(6)	Yurok	Wiyot	
	<i>me-</i>	<i>b-</i>	'4 th person prefix'
	<i>smoht-a'r</i>	<i>sbot</i>	'bow'
	<i>mech</i>	<i>bas</i>	'fire'

(Teeter 1964)

The Proto-Algonquian fourth person prefix *me (Bloomfield 1946:95) provides a comparison that supports archaic *m in the cognates in (6), rather than a change of *b > m in Yurok.

For many speakers in the early twentieth century, [β] and [m] were in free variation word initially. There are two speakers Reichard worked with, however, who had only [β] for this segment, and never [m]. They are Mrs. Barto and Warren Brainard, both of the Eel River area. Other than these two speakers, there is a predominance of [m] over [β] word initially, though [β] sometimes appears. (In the data shown in (7), Jerry James has [m] in 4 out of 5 words, and Mrs. Searson has [m] in 6 out of 8.) Della Prince also had

this feature (as evidenced by audio recordings and noted by Teeter 1964:15), though it is not represented in Teeter's orthography. Gibbs' nineteenth century documentation clearly shows [m] in all cases, indicating that the change of [m] to [β] was not yet underway at that time, or that the speakers he documented did not have this feature. This data is given in Tables 3-5⁵. Note that [β] is often recorded as <v>, for all speakers but I consider this a matter of transcription, and not of significant phonetic variation.

Table 3: *Variable pronunciation of initial /β/ in Wiyot*

	KVT:DP	GAR:JJ	GAR:S	ALK:M
'elk'	be'lakw	me'lakw		
'fire'	bas	mαs	mαs, vαs	aBês
'gills'			mi-t	
'girl'				matcer
'house'	bul		mo-l	
'mussels var.'		vitsαc	metcαc	
'nose' (4 th pers.)			mαter	mätëre
'redwood log'	buphal			
'salmon'	bołak	małak	mαłak	
'smoke'	bi'war		βewαr	
'tooth'	bapt			mêpt
'tongue'	bit			mīt
'wood'	boti'	madi'	va-D'e	māat ^h ī

Table 3 shows the pronunciation of initial /β/ in speakers who have variation between [β] and [m]. There are several different patterns to note. First, [m] predominates numerically in all speakers. Second, at times the same word is attested with two different pronunciations (as in Mrs. Searson's pronunciation of 'fire' as *mαs* or *vαs*). Third,

⁵ Sources for Tables 3-5: KVT = Teeter (1964) and Teeter and Nichols (1993); GAR = Reichard ms.; ALK = ms.; GG = Powers (1877:478-82).

Mary's speech represents a distinct, presumably more archaic, pattern, wherein initial /β/ is pronounced as [m] unless preceded by an epenthetic vowel, in which case it is pronounced as [β]. This preserves the complementary distribution of [β] non-initially, and [m] initially.

Table 4: *Invariant pronunciation of initial /β/ as [β] in Wiyot*

	KVT: DP	GAR: WB	GAR: B
'elk'	be'lakw	välakw	
'fire'	bas	vαs	βαs
'gills'			βê-t
'house'	bul	vo'l	vo'l
'mussels var.'			
'nose' (4th pers.)			
'redwood log'	buphal		vo'pəl
'salmon'	bołak	vαłak	vαłak
'smoke'	bi'war		vewar
'tooth'	bapt		vαpt
'tongue'	bit		
'wood'	boti'	βadi'	vadi

Table 4 shows data from those speakers (contemporary with those in Table 3) who only have [β] initially, never [m]. Both of these speakers (Warren Brainerd and Mrs. Barto) are from the Eel River area.

Table 5: *Invariant pronunciation of initial /β/ as [m] in Wiyot*

	KVT:DP	GG:HB	GG:W
‘elk’	be’lakw	meh luk	meh luck
‘fire’	bas	mess	măss
‘house’	bul	mohl	mohl
‘nose’ (4th pers.)			met héhr
‘redwood log’	buphal		
‘salmon’	bołak	maht luk	math lúk
‘smoke’	bi’war		
‘tooth’	bapt	meh’pt	měh’pt
‘tongue’	bit	méht	meht
‘wood’	boti’		mah tee

Table 5 shows that in the earliest records of Wiyot, those of Gibbs, the change to [β] had not yet taken place. Though we have no information about the exact identity of the speakers Gibbs recorded, they are said to represent two areas: Humboldt Bay, and Eel River.

The distribution of [β] and [m] indicates that there was a change of [m] > [β] that had progressed farthest in the Eel River area, while those in the Humboldt Bay and Mad River area retained [m] or had free variation of [β] and [m]. Interestingly, Mrs. Barto (who had [β]) was considered a very authoritative consultant by Reichard. She was not the most elderly (and hence not necessarily representative of the most archaic speech) of the people she worked with, but apparently was a talented consultant. Reichard describes how she sometimes had trouble understanding forms given by the James family (of Humboldt Bay), who “were accustomed to use abbreviated terms if the context could be understood” (1925:7). Reichard would go to Mrs. Barto to straighten out misunderstandings. Mrs. Barto also helped Reichard revise and interpret texts she recorded

from Jerry James. The texts in Reichard's notebooks are full of Mrs. Barto's input. All this indicates that it is Mrs. Barto's speech, which did not have the initial nasal alternation, that suggested to Reichard that the [m] variant was innovative or characteristic of younger speakers.

Sociolinguistic evaluation also played a part in Reichard's suggestion about the archaism of [β]. Reichard notes that "Molly Brainard [of the Eel River area – LJC] is acknowledged by all the Wiyot as a speaker of the most 'classical' Wiyot" (1925:7). But the fact that Wiyot [β] compares to Yurok [m], and the fact that the earliest records have only [m], indicates that the [m] pronunciation in these words is in fact archaic, and the change to [β] in the Eel River area is an innovation.

The overall picture of Wiyot dialect differentiation that emerges from early records is that local varieties were very shallowly differentiated, but certainly recognizable as distinct. The situation seems to be comparable to dialect differentiation in Yurok and Karuk, but different from the California Athapaskan languages (especially the more southerly ones), which are more highly localized.

4.2 Yurok

Early ethnographic and linguistic sources consistently divide Yurok into two main dialects: that of the Coast and that of the (Klamath) River. The 'Coast' dialect is attested around Trinidad and in the part of the Yurok coastal area near three large lagoons – Freshwater Lagoon, Stone Lagoon and Big Lagoon. The language as it is spoken along the coast to the north of the mouth of the Klamath is more akin to River Yurok than to Coast or Lagoon Yurok. This distinction reflects the ease of transport between the

Klamath River and coastal areas such as 'Omen, and relative difficulty of travel between the Klamath and the lagoons. The coastal dialect or dialects are no longer spoken, and today all speakers of Yurok speak the River dialect.

Garrett (2002) has identified several linguistic features of the Coast dialect of Yurok. Here I discuss a few of these – merger of final *e*, *a*, and *o* as *ey* after obstruents, insertion of a copy vowel between *h* and a stop, and the semantics of the term *woogey*.

Coast Yurok is also characterized by the merger of final *e*, *a*, and *o* as *ey* after obstruents. After sonorants, as in other Yurok dialects, final *e* and *a* become *ah*, and final *o* becomes *oh*. This distinction is demonstrated in the data in (7), where (7a) shows the merger after obstruents, and (7b) shows the lack of merger after sonorants. Note that the voiced velar fricative *g* patterns with the sonorants, as in *kegoh* 'acorn soup'.

(7)	Modern/River Yurok	Coast Yurok	
a.	<i>ch'ishah</i>	<i>ch'ishey</i>	'dog'
	<i>-chkah</i>	<i>-t'key</i>	'foot'
	<i>pishkah</i>	<i>pishkey</i>	'ocean'
	<i>mohkoh</i>	<i>mohokey</i>	'louse'
	<i>'echkwoh</i>	<i>'et'kwey</i>	'sea lion'
b.	<i>ho'omah</i>	<i>ho'omah</i>	'make fire'
	<i>mewah</i>	<i>mewah</i>	'boy'
	<i>'wes'onah</i>	<i>'wes'onah</i>	'sky'
	<i>-yah</i>	<i>-yah</i>	'belly'
	<i>kegoh</i>	<i>kegoh</i>	'acorn soup'
			(Garrett 2002)

A second feature of Lagoon Yurok is insertion of a copy vowel between *h* and a stop or affricate. The data in (7) show this process with the vowels *o* and *a*, the environment in which this epenthesis was regular.

(8)	Modern/River Yurok	Lagoon Yurok	
a.	koht-	kohoter	'one'
	kohchew	kohochew	'six'
	tohtehl	tohotehl	'hawk sp.'
	mohkoh	mohokey	'louse'
	hohkum	hohokum	'tobacco'
	smohta'r	smohota'r	'bow'
	yo'ohkohl'	yo'ohokohl'	'it's dark'
b.	wahpew	wahapew	'wife'

(Garrett 2002)

Garrett has also identified semantic differences between Lagoon and River Yurok. A Lagoon dialect speaker named K'erep uses the word *'woogey* with a wider range of meanings than it has on the River. In River Yurok, *'woogey* can mean either 1) a race of supernatural beings, or 2) a white person. K'erep also uses the word to mean 'foreigner,' or 'enemy' in the following excerpt from her account of an 1860 massacre at Stone Lagoon, part of which is reproduced in (9). Based on this semantic difference, Garrett reconstructs an earlier meaning of the term *woogey* as 'other.'

- (9) *Negohsew 'woogey. Negohsew 'woogey.*
go.int 'woogey go.int 'woogey
- 'E, 'e pishtu 'e nohsew 'e Chulew.*
well go Chilula

'The *'woogey* set out. The *'woogey* set out. Then the Chilula Indians set out [to raid Stone Lagoon and kill Yuroks].'

(ALK-K1)

K'erep also uses a distinct form of the ethnonym 'Chilula' (*Chulew*). The more common form is *Chulula*'. In this narrative, the Chilula are setting out on a raid to Stone Lagoon, and the term *'woogey* could not refer to 'white person/people' as in contemporary River Yurok usage.

Quinby (2003) has also found very slight dialect differences within River Yurok. Her linguistic findings confirm ethnographic accounts of contact between the region of

Pekwon and the Lagoon area. Data from Pekwon shows a slightly higher instance of archaic vowel retention (a characteristic of the Lagoon dialect) than that of other areas of the River dialect. Wechpus (at the upriver end of the River dialect area) is innovative in more features than any other area: variation in the form of third person pronominal prefixes, syncope in e-class verb inflections, and leveling of the oo- class theme vowel in bipersonal inflections. Quinby suggests that the archaisms of the Pekwon dialect may be due to contact with the Lagoon dialect, while Wechpus had less such contact and developed innovations. Innovations thus flowed downriver from Wechpus to the mouth of the Klamath.

4.3 Karuk

Karuk is also spoken directly along the Klamath River, and though it is spoken over a relatively large area, has no previously attested dialect variation (though Mills 1985:30 suggests that Harrington considered there to be three dialects associated with Clear Creek, Happy Camp, and the Lower River area). Bright, in his 1957 grammar, commented that “no significant dialect differences are observable among surviving speakers” (1957:1). Bright worked with people from the downstream half of Karuk territory (from Orleans, Somes Bar, and Tea Bar). Harrington and Merriam worked with speakers from the upstream part of the Karuk-speaking area (including Happy Camp) in addition to the downstream area, and their records also do not indicate a great deal readily apparent dialect differences. Hokan languages are considered to be archaic in California, and Karuk has had ample time to differentiate into dialects. Despite this time depth,

Karuk speakers maintained a rather uniform dialect. One feature that can be localized is a change of *s* to *θ*.

4.3.1 Variation of *s* ~ *θ*

Perhaps the most readily apparent variant in Karuk records is the pronunciation of /*θ*/, which for some speakers is [s]. Among Bright's consultants, it was older speakers who had the [s] variant, which he described as a "blade-dental slit-spirant" (1957:8). Records from decades earlier than Bright's fieldwork also showed that some speakers has [s] while others had [θ], and conform to Bright's observations. Kroeber's records (mostly from 1901) have more speakers with [s], while Harrington's records (from the mid 1920's) have both [s] and [θ]. There are increasing instances of [θ] attested throughout the first half of the twentieth century, consistent with a change of [s] > [θ]. In Table 6⁶ I list the early twentieth century speakers who had [s] and those who had [θ], with approximate dates of attestation.

⁶ Sources for Table 6: JPH = Harrington ms., ALK = Kroeber ms.; CHM = Merriam ms.

Table 6: *s* vs. *θ* in *Karuk* consultants

	Consultant	Location	Date ⁷	Collector
[s]	Alice & Peter McClellan	Orleans	1910-1918	CHM (34:333)
	Martha Horn	Orleans	1901	ALK (126:80)
	Three Dollar Bar Billy	Happy Camp	1901	ALK (99:237)
	Mrs. Bennett	Hupa	1901	ALK (116:132)
	Johnnie Gorham	unidentified	1901	ALK (96:405)
	Sandybar Jim	Katimin	1926	JPH (8:642)
[θ]	Nicholas Effman	Happy Camp	1910-1918	CHM (34:333)
	Ben Donahue	Katimin	1925-9	JPH (6-8)
	Sylvester Donahue	Katimin	1925-9	JPH (6-10)
	Francisco Capitán	Happy Camp	1925-9	JPH (8:660)
	Fritz Hanson	Katimin	1925-9	JPH (6-11)
	Phoebe Maddux	Katimin	1925-9	JPH (6-11)
	Susan Brizelle	Orleans	1933	JPH (12:1)
	Fannie Orcutt	Orleans	1926	JPH (12:704)

Speakers with [s] predominate in Kroeber's early records from 1901, while those with [θ] predominate in Harrington's records, primarily from the mid-1920s. Merriam's records suggest that this change originated upriver, in the region of Happy Camp. Merriam's consultants from Happy Camp had [θ], while his consultants from Orleans had [s].

Nineteenth century records (published in Powers 1877) all have [s] for this segment.

The wordlists in Powers (1877) are described as follows:

- (10) *Karuk wordlists in Powers (1877)*
- Ka'-rok, recorded by Stephen Powers, Scott's Bar, from Pa-chi'-ta, 1872
 - Arra-arra₁, recorded by George Crook, Klamath River, transliterated by George Gibbs
 - Arra-arra₂, recorded by George Gibbs
 - Peh'-tsik, recorded by Lieut. Edw. Ross, Red Cap's Bar
 - Eh-nek, recorded by George Gibbs, mouth of Salmon River
- (Powers 1877:447)

Data from these lists shows [s] throughout in Table 7.

⁷ Dates are approximate in some instances. Some speakers are attested over a period of several years.

Table 7: *Nineteenth century wordlist attestation for Karuk [s]*

	Bright (1957)	Ka'-rok	Arra-arra ₁	Arra-arra ₂	Peh'-tsik	Eh-nek
'foot'	fíθih	jīs	mu-fik-si	f'wis-si	fiss'-ee	fissee
'rain'	paθriha	pas-si-ri	pos-sor-ri	tu-pos-i-rish	pah-se-rik	to-pa-so-reh
'land'	iθívθa·ne·n	su'-san-i	sif-son-ni	si-vi-san'		
'feather'	?í·θka	a-isk				
'yellow'	θúkin	su-kin	sup-kin			
'cold'	?áθi·k		os-sik			uss-sik
'one'	yíθa		is'-sa	is'-sa	is-sah	is-sah
'four'	pi·θ		pis	pis	peeks	peehs

(Powers 1877:448-59)

The nineteenth century records indicate either that the change of [s] to [θ] had not yet originated, or that it was highly localized at that time (perhaps in Orleans), and thus unattested in these wordlists.

4.4 Hupa

Hupa and Chilula-Whilkut are very closely related dialects. A sub-dialect of Hupa spoken around the New River is poorly attested, but likely distinct. Hupa was spoken along the lower Trinity River, downstream from Chimariko speakers, and upstream from Yurok speakers. Chilula-Whilkut was spoken to the west, along the Redwood Creek and Mad River (upstream from Wiyot speakers).

4.4.1 Pronunciation of /x/

The pronunciation of /x/ (a velar fricative in the most commonly attested dialect of Hupa) is variable across speakers. Goddard (1914:291) notes that a speaker from the upper Redwood Creek “used k’ where Hupa has x, agreeing in this respect with the

Athapascans in the region immediately south.” Saxey Kidd, a Hupa and Chimariko speaker from the New River area, has *q* instead of *x*, and *qʷ* instead of *xʷ*.

- (11) *Saxey Kidd* *Trinity Hupa*
- | | | |
|---------------------|------------------------|--|
| qoqutʃʼēltiŋ | xohxo-čʼe-l-diŋ | ‘village at mouth of Willow Cr.’ |
| qaslintiŋ | xahslin-diŋ | ‘village at mouth of Horse Linto Cr.’ |
| qayahmeʼ | xayah-meʼ | ‘Canyon at the upstream end of Sugar Bowl’ |
| tlʼohmitaqwe | ʔoh-mitah-xʷe | ethnonym – ‘New River people’ |
- (Saxey Kidd data from Harrington ms., 24:148-56,
Trinity Hupa data from Sapir & Golla 2001: lexicon)

4.5 Chimariko

Chimariko was spoken along the Trinity river upstream from Hupa, along the New River and possibly in other adjacent areas (see Bauman 1980).

As mentioned earlier, attestation of Chimariko is fragmentary, and many of the consultants were only semi-fluent in the language. The most fluent speakers seem to have been Polly Dyer and her daughter Sally Noble, both of the New River area. New River is an area in which there were speakers both of Chimariko and of Hupa, and many people were bilingual. Though Dyer and Noble knew at least some words in Hupa, there is no evidence that they were substantially bilingual. Other than these two, Chimariko consultants were semi-fluent or had not used the language in many decades. The three geographic districts of Chimariko-speaking territory are New River, the North Fork of the Trinity River, and the South Fork of the Trinity River. Hyampom, along the South Fork, is close to the Wintu-speaking area, and many people were bilingual in Wintu there. New River and the North Fork of the Trinity had more people bilingual in Hupa (and presumably New River Shasta up the New River).

In at least one variant (*qʼ* vs. *tʼ*), Polly Dyer and Sally Noble pattern against all other speakers, and this could be due to either their relative fluency in the language, or their

dialect (that of New River vs. Burnt Ranch and Hyampom). This difficulty of interpreting phonetic variation in terms of dialects or shift interference is present for all variables. Here I discuss three phonetic variables that pattern coherently. There are many Chimariko variants that are only sporadically attested or for which a coherent pattern is not readily apparent. For a discussion of some of these more sporadic correspondences, see Berman, ed. (2001b:1041-6).

4.5.1 Variation of *q'* ~ *t'*

The variant with perhaps the clearest distribution is that of *q'* vs. *t'*. Polly Dyer and Sally Noble (of New River) have *t'* where other speakers (of Burnt Ranch and Hyampom) have *q'*. Relevant data is listed in Tables 8-9⁸, with variants of the words *q'umi/t'umi* 'elk hide,' and *q'amina/t'amina* 'flea.'

Table 8: *Pronunciation as [q']*

	AB	DT	LM
'elk hide armor'	<i>q^xúm·i</i> (ES)	<i>kúmi</i> (JC)	
'flea'	<i>q'áminä</i> (ES) <i>kam'-me-nah</i> (CHM)	<i>kämina</i> (JC)	<i>kam'-me-nah</i> (CHM)

Table 9: *Pronunciation as [t']*

	SN	PD
'elk hide armor'	<i>t'úmi</i> (RBD)	
'flea'	<i>t!xamína</i> (RBD) <i>tram'-me-nah</i> (CHM)	<i>t'ámina</i> (RBD)

Merriam's rendering of a retroflex tr for 'flea' in Sally Noble's speech can be assumed to be a mishearing. Merriam represented glottalized consonants in an inconsistent manner.

⁸ Sources for Tables 8-15: ALK = Kroeber ms.; RBD = Dixon 1910; CHM = Merriam ms.; ES = Berman, ed. 2001b; JC = Grekoff ms., attributed to J. Curtin.

The pronunciation of /t'/ as [q'] is unlikely as an obsolescence feature, due to influence from asymmetrical bilingualism in Hupa, since Hupa has /t'/ in its inventory. The distribution of t' and q' is thus very likely a dialect feature, more sure than the features which follow (which could be due to dominance in another language besides Chimariko).

4.5.2 Variation of t' ~ t

Although there are some instances of Abe Bush pronouncing [t], most instances of /t/ in others' speech corresponds to Abe Bush's [tʰ]. The speech of Saxey, though attested only in 65 words recorded by Sapir, also lacks [t], but there are only two potential occurrences of /t/ attested. Saxey was a rememberer who, according to Sapir "knew very little indeed and that little distorted by his Hupa phonetics."⁹ Similarly, Sapir noted that Abe Bush's pronunciation of Chimariko differed from that recorded in Dixon (1910), and that

it is very hard to make up one's mind whether the respects in which Abe Bush's material differs from that recorded by Dixon, aside from phonetic shortcomings on Dixon's part, are due to a genuine dialectic difference or are merely personal variations due to the fact that Abe Bush has forgotten a good deal and has been influenced by Wintun phonetics.

(*ibid*)

In Abe Bush's records, /tʰ/ is spelled <ch> or <ts> by Merriam, and various ways by Sapir that indicate a phonetic realization varying among [ts], [tʃ] and [tʰ]. Instances of this correspondence are cited in Tables 10-11. The same word is often spelled several different ways by the same recorder, and not all variants are cited here.

⁹ This and the following excerpt are from a letter to J. P. Harrington from E. Sapir, September 19th, 1927, reproduced in Berman, ed. 2001b:1090-1.

Table 10: Pronunciation of ʈ as [t] by Chimariko speakers

	LM	SN	MZ	PD
‘man’	<i>E-tre</i> (CHM) <i>’itri-</i> (JPH)	<i>’itri</i> (JPH)	<i>ítṛi</i> ’ (ES)	
‘valley’	<i>majtra</i> (JPH)			<i>maitra</i> (RBD)
‘hand’		<i>He-trah</i> (CHM) <i>hitra</i> (JPH)		
‘acorn’	<i>yu-tre</i> (CHM)	<i>jutri</i> (JPH)	<i>yútṛi</i> ’ [?] _[sic] (ES)	

Table 11: Pronunciation of ʈ as a non-retroflex by Chimariko speakers

	AB	S	DT
‘man’	<i>E-che-e</i> (CHM) <i>ítʰɪ</i> (ES)	<i>hutʰcɪntʰá·la</i> ¹⁰ (ES)	<i>ĩtcʰi</i> (ALK)
‘valley’	<i>máiDʰa</i> (ES)		
‘hand’	<i>Hā-tсах</i> (CHM) <i>hiDʰa</i> (ES)		
‘acorn’	<i>yútʰɪ</i> (ES)		

It is impossible to say definitively whether this variation is a dialect feature or the result of influence from Wintu (in the case of Abe Bush) and Hupa (in the case of Saxey Kidd). Wintu does not have a ʈ, and it is entirely possible that Abe Bush’s Chimariko has been influenced by Wintu in this respect. Hupa also does not have a ʈ, and Saxey Kidd’s pronunciation of this segment could be due to influence from that language.

Abe Bush also has a sequence of [tɪ] recorded in the word for *musoʔi* ‘house fly’ where others have [t] *músɔʔɪ* (AB-ES). Sapir’s comments on AB’s pronunciation of ‘house fly’ reveal that this sequence of [tɪ] should be distinguished from the orthographic <tr> used by Sapir to indicate [t] in the speech of Martha Ziegler. Sapir comments “r like

¹⁰ *hutʰcɪntʰá·la* is glossed as ‘old man.’

English *r*” (see Berman, ed. 2001b:1061), confirming that this is a sequence of two sounds, and not a single retroflex consonant.

To summarize, neither Abe Bush nor Saxey had the retroflex apical consonant *ɻ* that is characteristic of the Chimariko of other speakers. Considering that neighboring languages do not have this segment, this can be considered to be due to the influence of their dominance in other languages.

4.5.3 Variation of *l* ~ *r*

Observations about the pronunciation of /*r*/ as [l] versus [r] in Chimariko speakers are in part contradictory, or at least do not reveal a consistent dialectal pattern. Dixon (1910:309) noted that Polly Dyer had [l], while Friday had [r]. Kroeber, however, noted that Friday had [l] where Dr. Tom had [r] (as cited in Dixon 1910:309). It seems that some speakers had a liquid phoneme that varied in pronunciation, while others may have had a more consistent [l] or [r]. For all speakers, there is also an /*l*/ that does not alternate with [r]. This indicates that for some speakers there were two liquid phonemes, while for others they had collapsed to one. Considering that Hupa has only one liquid phoneme (/l/), the loss of the distinction between *l* and *r* could again be due to influence from or dominance in Hupa.

Table 12: *Pronunciation of Chimariko /r/ as [r]*

	AB	DT
‘person’	<i>t’šímar^a</i> (ES) <i>Che-mă-rah</i> (CHM)	<i>djimar</i> (ALK)
‘bird’	<i>Dí’ra</i> (ES)	<i>dīra^h</i> (ALK)
‘black bear’	<i>tc’é·samra</i> (ES)	<i>djicamera</i> (ALK)

Table 13: *Pronunciation of Chimariko /r/ as [l]*

	SK
‘person’	<i>t’címal</i> (ES)
‘black bear’	<i>cicám^lla</i> (ES)

Table 14: *Variable pronunciation of Chimariko /r/*

	PD	F	MZ	LM	SN
‘person’	<i>tcimal</i> (RBD)	<i>tcimal</i> (ALK)		<i>tʃímariko¹¹</i> (JPH) <i>Che-mar-ro</i> (CHM)	<i>tʃimara</i> (JPH) <i>Che-mar-rah</i> (CHM)
‘bird’	<i>di’la</i> (RBD)		<i>ti’la</i> (ES)		
‘black bear’	<i>tcisamra</i> (RBD)	<i>djicamla</i> (ALK)	<i>Djísamla</i> (ES)		
‘fish spear’	<i>altar</i> (RBD)			<i>’atral</i> (JPH)	<i>’atrala</i> (JPH) <i>Ah-ter</i> (CHM)
‘baby’					<i>halalla</i> (JPH) <i>hah-lah-lah</i> (CHM) <i>Hah-rah^l-lah</i> (CHM)

In Tables 12-14 we see that there is much variation in the pronunciation of /r/. The two most fluent speakers (Polly Dyer and Sally Noble) have [r] sometimes and [l] others. Polly Dyer has [l] in ‘person’ and ‘bird,’ and [r] in ‘black bear’ and ‘fish spear.’ Sally Noble has [l] in ‘fish spear’ and ‘baby,’ and [r] in ‘person’ and ‘fish spear’ (a different attestation). Abe Bush consistently pronounces [r], while Saxey consistently produces [l],

¹¹ The ethnonym *čimariko* contains the morpheme *čimar* ‘person.’

which indicates influence from Hupa for the latter. Martha Ziegler also consistently produces [l]

There is also a distinct /l/ phoneme that never alternates with [r]:

Table 15: *Pronunciation of Chimariko /l/*

	PD	F	MZ	LM	SN	AB
‘widow’	<i>lasa</i> (PD-RBD)			<i>Las-sah</i> (CHM)	<i>lassa</i> (JPH)	
‘my aunt’	<i>mālai-i</i> (RBD)		<i>mála’i</i> (ES)		<i>mala’i</i> (JPH)	<i>má·la’i</i> (ES)
‘bad’	<i>xuli</i> (RBD)		<i>hólh’</i> (ES)		<i>qoli-</i> (JPH)	<i>xólt’</i> (ES)
‘salmon’		<i>’umul</i> (ALK)		<i>’umul</i> (JPH)	<i>’umul</i> (JPH)	

In Table 15 we see that phonemic /l/ is never pronounced [r]. This indicates that there are two liquid phonemes that are in the process of collapsing to /l/ for some speakers.

Attestation of Chimariko indicates that there were many features that varied among different speakers, though it is not always possible to distinguish among the effects of language obsolescence, change in progress, and dialect differentiation. It is likely that different areas in which Chimariko was spoken were once differentiated dialectally.

5 Conclusion

Throughout this chapter I have discussed how Northwestern California indigenous peoples were organized into local groups, and to the extent that it is possible, the details of sociolinguistic relationships among these groups. Political organization was extremely localized, and entities equivalent to contemporary ‘tribes’ did not exist. Interpretations of ethnonyms were diverse, and many groups were recognized that are not reflected in the terminology in common usage today.

Although it is impossible to determine the exact extent of multilingualism, personal histories and accounts make frequent reference to multilingualism. Marriage records studied by Kroeber (Waterman & Kroeber 1934) indicate that, at least among the Yurok who they studied, inter-lingual marriages were common but not in the majority.

Differentiation among riverine dialects was slight, but sufficient enough to distinguish distinct dialects. Section 5 of this chapter includes details of dialect differentiation in Wiyot, Karuk and Chimariko, and evidence for changes in progress at the time of attestation for each of these languages.

Chapter 4: Functional convergence and the typology of language contact

1 Introduction

In chapters 2 and 3 I described language contact in Northwestern California, both in terms of its linguistic effects and sociolinguistic context. In chapter 2 I identified contact-induced convergence in the expression of semantic and grammatical categories, in word order and in the lexicon (by means of loan translations). In chapter 3 I described several aspects of sociolinguistic context, including political organization, ethnonyms, multilingualism and dialectology. In this chapter I will show how these two elements of language contact fit together, and how the profile of multilateral convergence in Northwestern California informs the theoretical discussion of language contact. Following the introduction, this chapter is organized into three sections.

A brief overview of the typology of language contact in §2 shows how it is typically organized and how models of local diffusion of linguistic innovation are relevant to the description of language contact. I suggest that the profile of language contact in Northwestern California does not fit into the typology of language contact as proposed in Thomason and Kaufman (1988), which divides language contact into *borrowing* and *shift-induced interference*. Language contact effects in Northwestern California are indicative of stable multilateral multilingualism, and there is no evidence of extensive shifts or shift-induced interference within the last millennium. Borrowing (in the sense of Thomason and Kaufman 1988) also does not fit with the profile of language contact in Northwestern California, since there is virtually no lexical borrowing. Northwestern

California instead reflects a third pattern of *functional convergence* (further discussed in §4.3).

In §3 I give an overview of three other language contact situations (the Vaupés River basin of Amazonia, parts of New Guinea, the Indian village of Kupwar) for the purpose of comparison with Northwestern California. Different linguistic profiles of contact-induced change correspond to different sociolinguistic contexts, and characteristics unique to Northwestern California contribute to its unique profile as a linguistic area. Multidirectional bilingualism led to multidirectional convergence, and an avoidance of lexical borrowing removed one pathway of phonological convergence and syntactic calquing.

In §4 I elaborate on the characteristics of Northwestern California as a linguistic area, comparing the linguistic effects and sociolinguistic context of language contact to those in other linguistic areas. The outcomes of language contact are affected by a complex interplay of sociolinguistic factors including the number of languages involved in the contact situation, the relative size of linguistic communities, the time depth of language contact, the proficiency of bilinguals, and proportion of the population that is bilingual, the relationships of dominance or pressure to shift among linguistic communities, and language attitudes and ideology. Language contact in Northwestern California is characterized by functional convergence of semantic and pragmatic categories, but not lexical borrowing, phonological convergence or the copying of surface syntactic structure. Not all situations of convergent syntax involve the borrowing of surface syntactic structure; some are instead involve internally coherent reanalysis and extension that results in similarities in the expression of semantic and pragmatic categories.

Section 5 concludes with an overview of how sociolinguistic factors can be included in the description of language contact. In order to do this, the parameters of sociolinguistic factors must be expanded beyond notions of ‘intensity’ and ‘cultural pressure’ to include more specific parameters of domains of language use, language attitudes, ideology and social positioning. Though not all of these factors are directly observable in a prehistoric language contact situation, some of them can be inferred. I also suggest that the theoretical discussion of language contact has been shaped by the prevailing situations of social, political and linguistic inequality of the last two centuries. Examining a linguistic area that developed largely in a situation of egalitarianism expands our view of what is possible in contact situations.

2 Describing language contact

In order to understand the linguistic outcomes of language contact, one must understand the sociohistorical context in which contact occurs. As Weinreich states, “A full account of interference in a language-contact situation, including the diffusion, persistence, and evanescence of a particular interference phenomenon, is possible only if the extra-linguistic factors are considered” (1953:3). Examining comparative grammar gives only part of the story of language contact. This approach is different from a line of research that seeks to define the linguistic constraints on language contact in terms of absolute and implicational universals of borrowability.¹ Thomason and Kaufman, in their watershed volume, showed that social context is more important than linguistic structure in determining the outcomes of language contact: “It is the sociolinguistic history of the

¹ See for example Sapir 1921, Haugen 1950, Winter 1973, Moravcsik 1978, Bickerton 1981.

speakers, and not the structure of their language, that is the primary determinant of the linguistic outcome of language contact” (1988:35). Many other studies of language contact have confirmed both the failure of purely linguistic constraints on language contact, and/or the importance of social context in determining its outcomes.² These studies demonstrate that particular patterns of contact-induced change correlate with particular social situations, that typological distance is not a barrier to linguistic borrowing, and that many elements of syntax originally considered impervious to borrowing (such as bound morphemes) are not so.

Often when studying linguistic areas, the actual mechanisms of language contact are not the object of study. A typical approach is shown by Campbell et al. (1986), in which the authors restrict their attention to synchronic comparison, in order to “attain our goals of examining the results of language contact which create a linguistic area, without getting lost in the details of the mechanisms which produced these results” (531). This approach is of course often a sensible one, since many linguistic areas (including all New World linguistic areas) developed during a time period for which we have little or no information about the exact mechanisms of language contact. In some cases there is detailed ethnographic information that allows for the study of the social circumstances of language contact, but in other cases there might be little such information. In the case of Northwestern California, the intrusion of Euro-Americans was relatively late (in some cases ca. 1850). This allowed Berkeley anthropologist A.L. Kroeber and his colleagues

² Just a few of these are Hill and Hill’s work on Mexicano (1986), Brody’s (1987, 1995) study of the borrowing of Spanish discourse particles into Mayan languages, Campbell’s (1989) critique of universals of grammatical borrowing, Enfield’s (2003) work on the Southeast Asian linguistic area, and Wertheim’s (2003) study of language shift and contact-induced change in Tatar.

(working in the early twentieth century) to interview people who had been born before the major social disruptions of the mid-nineteenth century and reconstruct a static era of the ‘ethnographic present.’ This ethnographic approach helps us understand many aspects of pre-contact culture in Northwestern California. The case studies discussed in §§3.1-3.3 all include direct ethnographic observation of multilingual practices, with more detail than is available for any prehistoric situation.

Since Thomason and Kaufman’s study was a broad overview considering many different case studies, they could not focus on the details of the sociolinguistic history that were important in determining the outcomes of language contact. They characterized sociolinguistic circumstances in terms of broad categories, assessing the ‘cultural pressure’ and ‘relations of dominance’ of linguistic communities in contact. A fuller understanding of a contact situation requires a fuller description of the sociolinguistic history of communities in contact, which is only possible in a focused case study. Such focused case studies are more common in the fields of linguistic anthropology and sociolinguistics, and can show how the diffusion of linguistic innovation (whether ‘contact induced’ or ‘internally motivated’) takes place at a local level. Two currents of such research are studies of how ideology translated into the adoption or rejection of innovation (e.g. Labov 1962, 1963, Eckert 1989, 2000, Hill 2000) and how social network structure influences the spread of innovation (e.g. Milroy 1980, Lippi-Green 1989).

In the literature on language contact, the social situation most often discussed is one of pressure to shift to a politically dominant language, and how communities either succumb to (resulting in language shift and/or language death) or resist this pressure

(resulting in language maintenance, often accompanied by borrowing). Not all language contact situations, however, are characterized by this dynamic of cultural pressure. As will be seen in §3, some linguistic areas have developed under conditions of egalitarian relations among linguistic communities.

In §2.1, I outline the typology of language contact described in Thomason and Kaufman (1988), which distinguishes two major types of contact-induced change (borrowing and shift-induced interference). I then outline (§2.2) two approaches to describing local diffusion of linguistic innovation: in terms of ‘localist’ versus ‘distributed’ ideology (Hill 2000), and in terms of social network structure.

2.1 Borrowing and shift-induced interference

The definition of borrowing and interference can be problematic, but it is useful to distinguish them since they occur in distinct circumstances and lead to distinct results.³ When describing contact-induced linguistic changes, the *donor* language is the source of the element transferred, and the *recipient* language receives it. If a word is borrowed, it is borrowed from the donor language to a recipient language. In indigenous Northwestern California, there is no single donor language for contact-induced linguistic changes.

Borrowing is the incorporation of some element from another language into one’s native language. The most common type of borrowing is lexical borrowing, though lexical borrowing can lead to the introduction of new phonemes or morphosyntactic constructions. There has been some discussion about whether syntactic borrowing should

³ Ideally these phenomena are discrete and lead to distinct results. In practice, they often co-occur in a single contact situation and can be difficult to distinguish if contact is long-term.

properly be termed ‘borrowing,’ or even whether it can occur at all.⁴ Whether or not one wishes to include syntax in the definition of ‘borrowing,’ there has been ample evidence of the transfer of syntax from one language to another. Central to the definition of borrowing is what van Coestem (1988, 2000) terms *recipient language agentivity*, meaning that the people effecting the change are dominant speakers of the recipient language. Borrowing may be done in order to make reference to the prestige or other value of another linguistic variety. Frequent borrowing within a linguistic area can result in regional vocabulary or widespread structural patterns.

Interference, or *shift-induced interference*, is the imposition of structure from one’s native language onto a non-native language. Since the agent effecting the change is not a native speaker of the recipient language, interference is characterized by donor language agentivity (in van Coetsem’s terms, *source language agentivity*). One common result of interference is a foreign accent when speaking a second language. Though often interference features are characteristic of individuals, when entire communities shift from one language to another, such features can come to characterize a particular variety of the recipient language. Some features particular to Irish English (such as the slit fricative pronunciation of /t/ and the recent past construction *be after VERB-ing*) have been attributed to interference from Irish. Widespread shift in a geographic area can also result in areal features, and shift interference is proposed as an explanation for several areal features in the Ethiopian highlands (Thomason 2001:111-3). One problematic aspect of the distinction between borrowing and shift is that it relies on the distinction between

⁴ For discussions of the mechanisms of syntactic borrowing see for example Prince 1992, Silva-Corvalán 1994, 1995, Harris and Campbell 1995, and the discussion in Thomason and Kaufman 1988, especially in the first two chapters.

native and non-native speaker, which might not be trivial in a multilingual linguistic community.

Just as interference is associated with language shift, Thomason and Kaufman (1988) associate borrowing with maintenance of a community's native language, since it allows one to use resources from another language while largely continuing to use one's native language. They distinguish three levels of the effects of language maintenance, according to the degree of intensity of contact among linguistic communities (reproduced here in 1). An important aspect of borrowing in Thomason and Kaufman's typology is that borrowing always involves the lexicon: "Invariably, in a borrowing situation the first foreign elements to enter the borrowing language are words" (1988:37). Grammatical convergence that occurs without lexical borrowing thus cannot be characterized as borrowing of this type.

(1) *Thomason & Kaufman's typology of maintenance (borrowing)*

Contact situation	Linguistic result
casual contact (little bilingualism among borrowing-language speakers)	only (nonbasic) vocabulary borrowed
intensive contact, including much bilingualism among borrowing-language speakers	much lexical borrowing; moderate to heavy structural borrowing, especially phonology and syntax
overwhelming long-term culture pressure from source-language speaker group	massive grammatical replacement

(adapted from Thomason & Kaufman 1988:50)

According to this typology, borrowing begins with the lexicon and proceeds to more integrated grammatical material as contact becomes more intense.

Degrees of shift-induced interference depend on the relative size of the shifting population, and on how well they are able to learn the target language (2):

(2) *Thomason & Kaufman's typology of shift-induced interference*

Contact situation	Linguistic result
small shifting group or perfect learning	no interference in target language as a whole
large shifting group and imperfect learning	moderate to heavy substratum/superstratum/adstratum interference, especially in phonology and syntax
extreme unavailability of target language	only vocabulary successfully acquired → abrupt creolization

(adapted from Thomason & Kaufman 1988:50)

Situations where a large number of speakers are not able to learn the target language completely are those in which there is the most shift-induced interference. Light to moderate interference invariably involves phonetics, phonology and syntax.

Thomason and Kaufman's typology works well for situations in which there is pressure to shift to a politically dominant language, and the contact being described is between two languages only. Thomason and Kaufman restricted their survey to two-language contact situations, noting that "Sprachbund situations are notoriously messy" (1988:95), and also considered situations of sociolinguistic dominance to be the norm in cases of grammatical borrowing:

Cultural pressure is most obviously exerted by a politically and numerically dominant group on a subordinate population living within its sphere of dominance; this is the classic situation that promotes structural borrowing.

(Thomason & Kaufman 1988:67)

As will be seen in subsequent sections, however, there are situations that this typology does not account for, including that of egalitarian multidirectional multilingualism. Structural convergence can in fact take place in the absence of 'cultural pressure' from a dominant language. Multidirectional multilingualism results in convergence that cannot

be subsumed into the typology in (1,2). According to Thomason and Kaufman's typology, all instances of contact-induced change should involve either lexical borrowing or phonetic and phonological interference, but contact in Northwestern California has neither of these properties. In 4.3, I will suggest that the functional convergence characteristic of Northwestern California is a third type of contact-induced linguistic change.

2.2 Approaches to local language diffusion

While Thomason and Kaufman (1988) characterized sociohistorical factors at a very broad level, other approaches to language variation and change focus on the individual, community or social network, describing the social forces that are at play at a very local level. Two such approaches are the study of language ideology and of social networks. In terms of ideology, here I will focus on one particular proposal by Hill (2000): that security of claims on resources translates into a 'localist' ideology of language use. The implications of social network structure for the spread of linguistic innovations are most prominently discussed in Milroy (1980). Ross (2001, 2003) has discussed the relationship of social networks specifically to the outcomes of language contact. In general, tight-knit social networks are more resistant to linguistic innovation, and more conducive to maintenance of distinct linguistic varieties than loose-knit networks.

2.2.1 'Localist' and 'distributed' culture of language

Hill, in her recent work (e.g. 2000) has made connections between the emblematic functions of language and its degree of internal differentiation, compactness, and spread. Though her case study examines language ideology adopted by individuals, I extend this

terminology to refer to aspects of language culture characteristic of communities, and specifically a stance toward linguistic borrowing.

Among the functions that people use language for is definition of membership in a group, which often determines access to resources, and this is the focus of Hill's (2000) comparison of two Tohono O'odham dialects in Arizona that differ in their relative innovation and sociolinguistic focus. (*Focus* is a term used to describe how much sociolinguistic variation there is within a linguistic community.) Hill finds that these differences in terms of language usage correlate with different construal of access to resources, especially water, which is scarce in the Arizona ecosystems she is examining. Hill distinguishes two types of stance: a *localist* stance, and a *distributed* stance, summed up as follows:

Localist stance: "I have a rightful and primary claim on valuable and dependable local resources that are necessary to my well-being."

Distributed stance: "I have no rightful and primary claim on valuable and dependable local resources adequate to sustain my well-being. However, I might be able to add to my limited primary claims secondary claims on a sufficient range of a distributed inventory of resources to sustain my well-being."

(Hill 2000:261)

Among the Tohono O'odham of Arizona, access to water determined the location of settlements and twice-yearly movements, and dialect boundaries in the contemporary Tohono O'odham reservation correspond to water drainage areas. These dialects are very salient among contemporary Tohono O'odham speakers, and since dialects correspond to drainage areas, the dialect of a particular village can be associated with a particular security of access to water. Hill contrasts two particular dialects – the Southeast dialect and the Southwest dialect. In the Southeast dialect region, there is higher rainfall (15-20 inches annually, as opposed to 0-5 inches in the Southwest). The lack of rainfall in the

Southwest means that people sometimes had to take refuge in nearby areas with access to water in order to survive. Personal life histories reveal that people in the Southwest moved around much more frequently than people in the Southeast, who lived either in a single location or observed a two-village yearly migration pattern. Hill speculates that social networks among the Southeasterners were more tight-knit than those among the Southwesterners.

These differences in access to water correlate with differences in linguistic attributes. Speakers from the Southwestern area are more resistant of innovation, are more sociolinguistically focused, more consistent within and across speakers, and less likely to accommodate to other dialects. Hill's observations among the Tohono O'odham show how something as intangible as 'language ideology' can be crucial in determining many aspects of linguistic variation and change. This runs counter to a trend of associating language spread with spread of technology (e.g. Bellwood 1997, Renfrew 1988). The two communities of Tohono O'odham speakers had the same subsistence technology, but very different senses of security about access to an important resource.

In extending Hill's terminology to the discussion of linguistic areas, I am broadening the definition of what constitutes a 'localist' or a 'distributed' stance. I hypothesize that different profiles of language contact correlate with different levels of security of access to resources. In a situation of localism, maintenance of linguistic separateness is preferred, while convergence at the level of semantics and pragmatics may still proceed. In a situation in which the stance toward linguistic borrowing is distributed, resources of more than one language are regularly combined, resulting in lexical borrowing, and possibly syntactic calquing and the development of phonetic and phonological similarity.

Relationships of dominance among languages, domains of language use and diglossia, and practices regarding language mixing are additional ways in which a 'localist' of 'distributed' culture manifests itself. Communities with insecure social or political positions are more likely to use resources from different languages and linguistic varieties, while those with secure positions are more likely to retain linguistic distinctness.

2.2.2 Social network structure

The role of social networks in language variation, change and maintenance is described in Milroy (1980), and prominent case studies of language variation in social networks include Labov (1972 and many others) and Eckert (1989, 2000). A *social network* "refers quite simply to the informal social relationships contracted by an individual" (Milroy 1980:174). Social networks can be characterized by two basic parameters: *denseness* and *multipexity*. In a dense network, those individuals with whom an individual has social relationships also have relationships with one another. In a multiplex network, individuals are related to one another in several different capacities (e.g. your barber is also your brother-in-law). Dense, multiplex networks are units of norm enforcement, and are more resistant to innovations from outside the network than loose networks in which uniplex relationships predominate. Most studies of social networks are situated in contemporary urban society. The findings of this research, however, are applicable to other types of societies. Since dense, multiplex networks act as units of norm enforcement, they also act as units supporting language maintenance.

Ross (2001, 2003) has associated different types of social networks with different types of contact-induced language change. He has identified the following four types of community structure:

(3) *Ross' association of network structure with types of contact-induced change*

- a. If a community is *closed*, its members may complicate their lect, resulting in phonological compactness, morphological opacity, and suppletion – basically, whatever makes the language harder to learn and understand.
- b. If a community is *open, tightknit* and *polylectal*, lexical calquing and metatypy may occur, restructuring the primary lect's semantic organisation and at least part of its syntax (starting at the level of the clause) on the model of the secondary lect.
- c. If a community is *open, looseknit* and *polylectal*, speakers may shift from the primary to the secondary lect, leaving either no trace or reshaping the phonology of the secondary lect on the model of the primary one.
- d. If a community is *open, looseknit* and *monolectal*, its members may adopt a lingua-franca form of their lect, resulting in simplification and regularity.

(Ross 2003:193)

The language contact to be discussed in the case studies in §3, and in Northwestern California, is all of the type in (b). Each of the cases discussed involve open communities (with relationships to other linguistic communities) which are tightknit (at least in the Vaupés and in Northwestern California, where villages are organized around kin structure) and multilingual. Yet, as will be seen in Sections 3 and 4, the processes of convergence can be further subdivided, affected by social network structure and other aspects of the sociohistorical context of language contact.

2.3 Conclusion

I have outlined two major approaches to the description of language contact: in terms of a typology of linguistic effects, with broad generalizations about sociohistorical circumstances (as in Thomason and Kaufman 1988), and in terms of diffusion of innovation at a local level. Understanding language contact in a linguistic area

necessarily involves both of these levels of description. In the case studies in 3, contact-induced linguistic changes can be considered within the context of the local day-to-day practice of multilingualism

3 Comparison to other areas

A sketch of the linguistic areal features and sociolinguistic circumstances of language contact in three linguistic areas (the Vaupés Basin of Amazonia, the Sepik Basin and other areas of New Guinea, the Indian village of Kupwar) provides a basis for comparison to Northwestern California. These areas represent several different possible outcomes of areal convergence. In the Vaupés, syntactic, morphological and phonological convergence has proceeded despite an almost complete lack of lexical borrowing and attitudes disfavoring language ‘mixing’. New Guinea has a great many types of contact situations, including creolization, esoterogeny (increasing of linguistic difference in an in-group language) and grammatical convergence. In Kupwar, grammatical convergence has resulted not only in semantic equivalency but in isomorphism, and co-occurred with lexical borrowing.

In comparison to these areas, Northwestern California stands out as having areal features throughout the grammar, but lacking regional vocabulary or phonological convergence. The grammatical expression of areal features is diverse and rarely results in isomorphic constructions. An explanation for the differences in profile among the four areas discussed can be found in the different sociocultural contexts. Northwestern California had a smaller incidence of bilingualism than the Vaupés or New Guinea. Unlike New Guinea or Kupwar, but like the Vaupés (before the emergence of Tucano as a lingua franca), there was no regional lingua franca in Northwestern California. Related

to this, there was no formal situation of diglossia (no language specifically devoted to government, trade, literature or religion). These sociolinguistic factors contribute to linguistic practices that produce the unique profile of each linguistic area. Frequent code-switching (such as was observed in Kupwar) leads to the development of isomorphism. A socially or politically dominant language can be a source of frequent lexical borrowing (as seen in Balkan languages borrowing from Turkish), and thus of phonological convergence. In cases of almost universal bilingualism (as in the Vaupés), phonological convergence can take place without lexical borrowing.

3.1 Vaupés, Amazonia

This account of language contact in Amazonia is based on Sorensen (1967) and Aikhenvald (2001). The Amazon basin is one of the most linguistically diverse areas in the world, with hundreds of languages grouped into more than a dozen families. There are many different local language contact situations in Amazonia, and here I will focus on multilateral diffusion in the Vaupés linguistic area, which spans the Brazil-Colombia border. Some of the languages spoken pre-contact times are Tucano, Piratapuya, Wanano (East Tucanoan branch of the Tucanoan family), Tariana (North Arawak⁵ branch of the Arawakan family) Dâw, Hupda, and Yuhup (Makú family). Tariana is itself a diverse language with many dialects. Contact-induced linguistic change is prevalent in the East Tucanoan languages and Tariana, while the Makú are largely outside the multilingual network that created the Vaupés linguistic area (Aikhenvald 2001:19).

⁵ North Arawak is a problematic genetic subgroup and may be better considered a geographic group (see Aikhenvald 2001b).

The Vaupés is well-known for the institutionalized linguistic exogamy that governs choice of marriage partner among speakers of East Tucanoan languages and Tariana. One must marry someone of a different linguistic group, and the result is that virtually everyone is multilingual. Sorensen notes that almost everyone is not only bilingual, but knows “three, four or more languages well” (1967:670). One’s father’s language identifies one’s ethnolinguistic group. This institutionalized exogamy created multilingual extended families. Aikhenvald claims that there was no politically or socially dominant language in this region prior to European colonial contact. Relationships among speakers of East Tucanoan and North Arawakan languages were egalitarian. There was no regional lingua franca (though Tucano has emerged as a lingua franca in the twentieth century, and Spanish and Portuguese are becoming increasingly dominant). Thus the contact situation as observed in the latter half of the twentieth century reflects an extended period of egalitarian multidirectional multilingualism followed by the emergence of a dominant lingua franca (Tucano) and the use of local varieties of colonial languages (Spanish and Portuguese). Since the Vaupés area spans Spanish and Portuguese speaking areas, Tucano is the one common languages among indigenous peoples.

Aikhenvald (2001) identifies convergent changes in East Tucanoan languages and Tariana at all levels of grammar. Though there were changes in both groups of languages, most of the changes affected the Tariana dialects, making them more similar to Tucanoan languages. This likely reflects the recent (20th century) cultural dominance of the Tucano language, and its status as a lingua franca. Aikhenvald (2001) identifies many convergent

changes in progress in Tariana, indicating that they might be the result of the recent sociolinguistic dominance of the Tucano, which are a widespread linguistic group.⁶

In the domain of phonology, some dialects of Tariana are neutralizing the contrast between phonemes that are not contrastive in East Tucanoan languages (e.g. /l/ vs. /ɾ/ and /s/ vs. /tʃ/, aspirated vs. plain sonorants). In each case, the neutralization is variable and ongoing (Aikhenvald 2001:36-40). Tariana syllable structure has also become more like that of Tucano, allowing coda /h/. Phonological processes developed in Tariana due to influence from East Tucanoan languages include a word initial or root initial [dy] or [dʒ] allophone of /y/, nasalization at the level of phonological word, a word initial [d] allophone of /t/, homorganic vowel insertion in independent pronouns, and reduction of word initial unstressed vowels (Aikhenvald 2001:44-51).

As in the domain of phonology, most convergent changes in morphology and syntax involve Tariana becoming more like the East Tucanoan languages. For example, most Arawakan languages have prefixal pronominal markers that operate on an ergative-absolutive basis. Tariana has developed an additional set of pronominal markers that are enclitic and operate on a nominative-accusative basis, as in East Tucanoan. Similarly, the East Tucanoan languages have developed pronominal proclitics, to become more like Tariana (Aikhenvald 2001:68-71). Other contact-induced changes in Tariana include the use of demonstrative classifiers, the development of gender and number distinctions that

⁶ Sorensen notes, "Because the Tukano tribe is so widespread, almost every longhouse has at least one Tukano woman in it. Therefore, persons who do not have a Tukano for father or mother still have someone in their longhouse from whom they can absorb the correct pronunciation of Tukano" (1967:679).

parallel those in East Tucanoan languages, the development of case marking for grammatical relations, the development of a complex system of evidentiality and the development of similar verb-compounding constructions.

Despite the prevalence of contact-induced changes in grammar, languages in the Vaupés tend to avoid lexical borrowing. Loan translations, however, are more common. When morphemes are directly borrowed they tend to be bound morphemes. This can perhaps be attributed to the strong prohibition against code-switching or any form of ‘mixing’ of languages. Code-switching is used primarily with a quotative function – to quote the direct speech of another person or to quote animals or evil spirits in narrative (Aikhenvald 2001:187-200). Sorensen also directly observed the practice of keeping languages separate:

I have observed that when an Indian knows how to speak two closely related languages ... he carefully and even consciously keeps them apart. It has occurred to me that the exogamic and other cultural institutions ... may be exerting a force that makes a speaker want to render closely related languages farther apart, even to an artificial extent, but so far I have detected no linguistic innovations to this end.

(Sorensen 1967:675-6)

In addition to this conscious separation of closely related languages, Sorensen observed passive bilingualism as a favored practice over any degree of code-switching. People might begin a conversation speaking two different languages, and then switch to a different one:

There is no development of cross-linguistic puns. There is no stylistic device of switching from one language to another or of interspersing one’s conversation with quotes from another language. Conversations in two or more languages indeed occur on occasion ... Each individual initially speaks in his own father-

language ... but after a while the junior persons change, without comment, to the longhouse language, to Tukano as the *lingua franca*, or to another language.

(Sorensen 1967:678)

The near universal incidence of multilingualism in the Vaupés has created conditions favorable to the diffusion of grammatical patterns across languages. Each longhouse has a unique combination of languages spoken in it, as women from different linguistic communities move to a patrilocal residence. Grammatical diffusion, however, is indirect and proceeds despite overt prohibitions against the ‘mixing’ of languages which are documented in twentieth century ethnographic observations.

3.2 New Guinea

Foley (1986) describes several small linguistic areas within New Guinea, with a good deal of sociolinguistic information. I will use his description of the Sepik River basin as a case study, but also refer to sociolinguistic descriptions of language contact in New Guinea (Sankoff 1980, Ross 1987, 1996, 2001, 2003). New Guinea, like the Pacific Coast of North America, is a macro-area within which there are several small diffusion areas. One of these small areas is the Sepik River basin, where three unrelated languages (Yimas, Alamlak and Enga) have many contact features in common (4).

(4) *Areal features of the Sepik River Basin, New Guinea*

Palatal series of consonants

Central vowels

Suffixing of possessive morpheme to possessor

Similar tense systems

In Yimas and Alamblak only:

Oblique suffix *-n*

Oblique *-n* used to form temporal adverbial clauses

Verb compounding

Adverbial incorporation

In Enga and Alamblak only:

Similar switch reference system

(Foley 1986:263-8)

Though the history of these three languages is not entirely known, Foley is able to show that many commonalities are due to innovation and are not archaic. A palatal series of consonants is archaic in Enga, but innovative in Yimas and Alamblak. Other similarities, such as the presence of central vowels in Yimas and Alamblak, are archaic, but their maintenance could be considered due to contact. Foley (1991:19) lists some additional similarities of the larger region (the Sepik-Ramu basin) in which Enga, Yimas and Alamblak are found. These include a consonant inventory with stops in four places of articulation (labial, dental, palatal, velar), prenasalized stops, a phonemic contrast between two liquids (/l/ and /r/), uncommon elsewhere in New Guinea, and the lack of phonemic tone, which is common elsewhere in highlands New Guinea.

Foley (1991:11-18) provides an ethnographic sketch of the Yimas. Yimas is a Papuan language spoken by about 250 people in two villages in the Sepik River basin. The Sepik area is very rich in resources and (like the Northwestern California area) allows for sedentary hunter-gatherer societies. The Yimas trade frequently with other villages; since they have rich access to fish, they trade for sago. In some of their trade relations they use a pidginized form of the Yimas language, though recently Tok Pisin has become more

common. Earlier in the twentieth century, a pidgin form of a nearby language Iatamul was also used. Religious life centered around a 'cult house' where the men of a single clan would also sleep and socialize (though this tradition is no longer practiced). Foley characterizes Sepik societies as strongly egalitarian, lacking institutionalization of power and authority. Multilingualism among individuals is common, and villages located at language borders have a large proportion of bilingual households.

Papua New Guinea is the most linguistically diverse area in the world, and there aspects of the local culture of language that cultivate this diversity. Sankoff (1980), Foley (1986) and Ross (1993, 2001, 2003) describe various aspects of the sociolinguistics of Papua New Guinea. Indigenous Papua New Guinea is characterized by very small, localized groups with egalitarian power relations among them. Sankoff extends this egalitarianism to multilingualism, citing the lack of consensus on a single prestigious language:

Each group was ethnocentric about its own variety, but since such groups were all very small, since people knew that other people thought their own was the best, and since within a region there was no consensus that a particular variety was the best, the situation was certainly an egalitarian one.

(Sankoff 1980:10)

Contact with speakers of other languages heightened this ethnocentrism. Among bilingual speakers of Siane, "it appears that contacts with and awareness of other languages have led not to leveling but to heightened consciousness of and pride in difference" (Sankoff 1980:10). This is what Foley terms the 'self-directed' consciousness, "which regards one's own customs and language as best and others as inferior" (1986:27). It is the balance and tension between 'other-directed' and 'self-

directed' consciousness that allows for diffusion of linguistic features along with the maintenance of linguistic diversity.

3.3 The village of Kupwar, India

Gumperz and Wilson (1971) describe grammatical convergence in the village of Kupwar, India. Their study was the first to examine the actual mechanisms of ongoing contact in a developing linguistic area. In this case, the area is very small – a single village in the Sangli district, Maharashtra, India. Four languages (Urdu, Kannada, Marathi and Telugu) are spoken in Kupwar. Multilingualism in Kupwar is characterized by social stratification of speakers of different languages (Marathi is the principal literary language and is the lingua franca of the village, as well as being spoken by lower-class laborers; Kannada-speaking Jains and Urdu-speaking Muslims own most of the land of the village). Multilingualism is practically universal among men, and less common among women. There are patterns of diglossia in Kupwar (restriction of particular languages to particular domains). One's home language may not be the same language spoken when conducting business or when in public areas. To summarize, in Kupwar there is a situation of long-term stable multilingualism with social stratification of linguistic groups and diglossic partitioning of the use of different languages.

Gumperz and Wilson observed that code-switching was common among men in Kupwar. This has led to the phenomenon they call *intertranslatability* (convergence of surface syntactic structure). Local Kupwar varieties (which are used in addition to standard varieties) of each of the languages have converged, in many instances creating surface structures that are isomorphic: "the codes used in code-switching situations in

Kupwar have *a single syntactic surface structure*” (155). Most changes are in the direction of Marathi, the local lingua franca.

Gumperz and Wilson outline changes in gender classes, agreement patterns, verb compounding, subordination, question formation, and pronominal categories. For example, Kupwar Urdu has developed a distinction between inclusive and exclusive 1st person pronouns, like Kannada and Marathi. Kupwar Kannada uses sentence-final ‘what’ (in Kannada *yan*) as a formative for yes-no questions, just as Urdu and Marathi does. Some examples that Gumperz and Wilson use to demonstrate isomorphism are in (5).

(5) *Isomorphism in Kupwar varieties of Urdu, Marathi and Kannada*

a.	<i>tumhara</i>	<i>ghər</i>	<i>bəḍa</i>	<i>hay</i>	[Kupwar Urdu]
	<i>tumcə</i>	<i>ghər</i>	<i>moṭhə</i>	<i>hay</i>	[Kupwar Marathi]
	<i>nimd</i>	<i>məni</i>	<i>dwədd</i>	<i>eti</i>	[Kupwar Kannada]
	your	house	big	is	
	‘Your house is big.’				

(Gumperz & Wilson 1971:159)

b.	<i>o</i>	<i>gæ</i>	<i>ta</i>	<i>bhəys</i>	<i>car ne ko</i>	[Kupwar Urdu]
	<i>tew</i>	<i>gel</i>	<i>hota</i>	<i>mhays</i>	<i>car-ay-la</i>	[Kupwar Marathi]
	<i>aũ</i>	<i>hog</i>	<i>ida</i>	<i>yəmmi</i>	<i>mes ka</i>	[Kupwar Kannada]
	he	go	did	buffalo	graze to	
	‘He went to graze buffalo.’					

(Gumperz & Wilson 1971:160)

Gumperz and Wilson further find that lexical borrowing is frequent among the languages of Kupwar, including that of ‘content words’ and ‘function words’ such as conjunctions. The borrowing of ‘content words’ was more common, but many types of ‘function words’ were also borrowed:

Our data on borrowing of morphs confirms the findings of Weinreich, Emeneau and other students of language contact who maintain that both lexical and grammatical items can be borrowed, and that content word borrowings are more frequent ... Next after

content words in order of frequency are adverbs, conjunctions, post-positions and other similar function words.

(Gumperz & Wilson 1971:161)

Some aspects of the contact situation in Kupwar set it apart from those in the Vaupés, the Sepik and Northwestern California. In Kupwar, there are distinct social classes and distinct domains associated with each language, contrasting with the more egalitarian relationships among linguistic communities in the Vaupés, Sepik and Northwestern California areas. Further, code-switching and lexical borrowing is common. In the Vaupés and in Northwestern California there was neither institutionalized diglossia nor lexical borrowing. In the case of the Vaupés, prohibitions against code-switching and lexical borrowing can be directly observed, while in the case of Northwestern California, these can only be inferred.

3.4 Conclusion

The case studies in 3.1-3.3 demonstrate that different sociohistorical circumstances correlate with different profiles of language contact in linguistic areas. Frequent code-switching and diglossia are characteristic of the village of Kupwar, and co-occur with the development of isomorphism and lexical borrowing. In the Sepik Basin, as in many areas of New Guinea, grammatical convergence proceeded in the absence of much lexical borrowing, and egalitarian relations among linguistic communities encouraged the maintenance of diversity and distinctiveness. In the Vaupés, near universal multilingualism created an environment in which convergence proceeded at all levels of grammar, despite attitudes disfavoring borrowing.

4 Northwestern California and the typology of language contact

According to Thomason and Kaufman's typology of language contact (as outlined in §2.1), contact-induced linguistic change is either *borrowing*, or *shift-induced interference*. Borrowing invariably includes lexical borrowing, and shift-induced interference invariably includes phonetic and phonological interference. Neither of these are characteristic of language contact in Northwestern California. There is also a sociohistorical difference between those contact situations discussed in Thomason and Kaufman (1988) and Northwestern California. In Northwestern California, relations among linguistic communities were relatively egalitarian, without the 'cultural pressure' present in the case studies in Thomason and Kaufman (1988).

Sections 4.1 and 4.2 elaborate on the characteristics of Northwestern California in terms of its linguistic areal features (4.1) and sociolinguistic circumstances (4.2). In §4.3, I propose that functional convergence is a profile of language contact distinct from borrowing or shift-induced interference.

4.1 Linguistic areal features

Northwestern California is situated between two larger macro-areas of the Northwest Coast of North America, and of Northern California. There is no bundle of isoglosses of areal features that specifically differentiates Northwestern California from these surrounding areas. Yet the area is still coherent to speak of as a region of intense cultural interaction. There are some characteristics of language contact in Northwestern California that are typical of linguistic areas (convergent changes in morphosyntax), while others are atypical (lack of lexical borrowing and little or no syntactic calquing).

The convergent changes that have occurred cannot be attributed to shift-induced interference, nor to borrowing (in the sense of Thomason and Kaufman 1988). Each language has developed features that make it more similar to its neighbors, and the formal expression of these features is diverse.

Northwestern California's position as a small linguistic area sandwiched in between other linguistic areas is typical of the Pacific Coast of North America. Hinton (1991) describes influence between Takic and Yuman languages, placing them in a network of small linguistic areas along the Pacific Coast. Beck (2000) describes the Central Northwest Coast within the context of a much larger Northwest Coast area that extends from southern Alaska to Northwestern California. In each small area of the Pacific Coast (whether defined culturally or geographically), there are local peculiarities as well as expressions of larger macro-area features.

The linguistic contact features of Northwestern California discussed in Chapter 2 and their distribution are listed in (6).

- (6) Consonant inventory:
- Three stop series (Tolowa, Hupa, Chimariko)
 - Uvular consonants (Hupa, Chimariko)
 - Voiceless laterals (Tolowa, Hupa, Yurok, Wiyot)
 - Retroflex apical stops (Tolowa [affricate], Chimariko)
 - Lack of l~r distinction (Tolowa, Hupa, Karuk)
 - Diminutive consonant symbolism (all)
 - Diminutive affix of similar shape (Hupa, Wiyot, Karuk)
 - Local influences in numeral systems (discussed in Chapter 2, §2.1)
 - Similarities in directional terminology (all)
 - Repetitive reduplication (Yurok, Karuk, Chimariko)
 - Second person prominence (Yurok, Karuk, Chimariko)
 - Classifier for 'house' (Yurok, Wiyot, Karuk)
 - Numeral classifiers (Yurok, Wiyot, incipient in Karuk, Hupa)
 - Preverbal particles (Yurok, Wiyot, Karuk)
 - Verb initial word order (Yurok, Wiyot, to some extent Karuk and Hupa)
 - Frequent loan translations
 - Shared euphemisms

There are 15 features above for which I can specify distribution. Of these, Tolowa has 6, Hupa has 8, Yurok has 10, Wiyot has 9, Karuk has 9, Chimariko has 7. Each feature may only be present in a few languages, but each language has a similar number of features. For the most part, these features are not qualitatively different from areal features found in other linguistic areas. We do find, however, that lexical borrowing and local phonological convergence (as opposed to the expression of larger macro-area phonological features) are absent.

4.1.1 Lack of phonological convergence

Local convergence in phonological inventory is conspicuous in its absence. If we are to take Karuk, Hupa and Yurok as the 'core' members of the Northwestern California culture area, we see that their phonological inventories are radically different. The consonant inventories of Karuk, Hupa and Yurok are repeated from Chapter 1 in (7-9).

(7) *Hupa phonological inventory*

Consonants:

	d		g ^y	g	ɢ	ʔ
	t		k ^y			
	t'		k ^{y'}		q'	
	ʒ [dz]		ʒ̥ [dʒ]			
	c		č ^w			
	c'		č ^{w'}			
	ʁ					
W [ʌ]	s, ʈ		x		h	
			x ^w			
	l					
m	n					
		y	w			

Marginal phonemes: b, š, g, k, k', ŋ

(Golla 1996:366-8)

(8) *Yurok phonological inventory*

Consonants:

p	t		k	kw [k ^w]	' [ʔ]
p'	t'		k'	k'w [k' ^w]	
		ch [tʃ]			
		ch' [tʃ']			
	hl [ʈ]				
	s	sh [ʃ]	(x) ⁷ , g [ɣ]		h
	l				
m	n				
	r	y	w		

(Robins 1958:1-2)

⁷ The status of /x/ as a phoneme is marginal.

(9) *Karuk phonological inventory*

Consonants:

p	t		k	ʔ
			č	
f	θ	s	š	x h
v [β]	r		y	
m	n			

(Bright 1957:7)

Karuk has one stop series, Yurok two and Hupa three. Hupa has several conspicuous absences (*p*, *k*), while Yurok has an unusual rhotic ([ɹ]) and Karuk has an unusual interdental fricative. Both Hupa and Karuk have only one liquid, but Hupa has *l* and Karuk has *r*, and Yurok has both *l* and *r*.

The explanation for this maintenance of radically different consonant inventories can be attributed to the lack of lexical borrowing, to a language attitude of esoterism that this lack of borrowing indicates, and to a relatively low incidence of bilingualism (compared to areas with close to universal bilingualism). Lexical borrowing can introduce new allophones or phonemes into a language, and co-occurred with the spread of retroflexes in the South Asian area (Emeneau 1956), and the development of a voicing contrast in English fricatives. Aikhenvald (2001), however, finds that in the Vaupés area, phonological convergence occurred in the absence of lexical borrowing. Lexical borrowing is therefore not the only mechanism of phonological convergence, and in the Vaupés area seems to have been made possible by near-universal bilingualism.

4.1.2 Lack of lexical borrowing

In an area in which people have regular contact with speakers of other languages and share many aspects of culture, one would expect lexical borrowing. Lexical borrowing is

often used as a diagnostic for reconstructing past contact situations. Haas (1969:78) cites the Abnaki word for ‘hog’ (*piks*), which was recorded by a French missionary, as evidence that Abnaki speakers had already been in contact with speakers of English (or, presumably, that Abnaki speakers had borrowed from some intermediary) before their language was recorded in the first half of the nineteenth century. Very few such clues are available in Northwestern California. It is not the case, for example, that all of the terminology for fishing technology is borrowed in Karuk, or the word for ‘sinew-backed bow’ is borrowed (both of these being technologies that were introduced within the last millennium). Since Northwestern California languages have had plenty of opportunity to borrow words from one another, some explanation for this lack of lexical borrowing must be sought.

Similar cases in which grammatical borrowing has occurred in the absence of lexical borrowing are found in the Vaupés, and in many areas in Melanesia (described in Ross 1987, 1996 and Mühlhäusler 1996). Weinreich notes that there are some cases where loan translations are favored over lexical borrowing, and that “unequal degrees of resistance to transfers and the preference for loan translation over transfers are a result of complex socio-cultural factors which are not describable in linguistic terms alone” (1953:62). Relationships among linguistic communities and the domains in which languages are used affect whether or not there will be lexical borrowing in a contact situation. Those situations in which there is a regional lingua franca or culturally dominant language (as in Kupwar, or as in any number of colonial contact situations) tend to be ones in which there is lexical borrowing. In situations of locally egalitarian relationships among

linguistic communities (as in the Vaupés or Northwestern California), there is not necessarily lexical borrowing.

Ross (1987) provides an explanation for the avoidance of lexical borrowing in terms of the maintenance of a distinctive identity:

The reason why borrowing did not begin with the lexicon is that it is precisely the words of the language which are perceived by its speakers as its substance and therefore as the emblem of identity. Adaptive changes in morphosyntax, on the other hand, occur unconsciously and hence have no emblematic significance.

(Ross 1987:597)

Ross's concept of *emblematicity* provides an explanation for why people avoid borrowing lexicon from other languages. Maintaining distinctive identities, expressed by distinctive language, is an important function of language. This avoidance of borrowing lexicon has further consequences for the linguistic outcomes of language contact.

4.1.3 Functional convergence

A third distinct characteristic of linguistic areal features in Northwestern California is that they tend to involve convergence of semantic categories without convergence of form. Areal features are expressed in formally diverse ways (as discussed in Chapter 2, §3), and do not necessarily result in isomorphism. The category of 'house' in classifier systems is expressed with a classificatory suffix in Yurok and Wiyot, and a classificatory verb in Karuk. Second person prominence in argument marking is expressed with a distinct inverse-marking morpheme in Yurok and Karuk, and none in Chimariko. Repetitive reduplication is prefixing in Yurok and suffixing in Karuk. All of these convergent changes have developed via internally coherent pathways. Karuk already had classificatory verbs, and added a new one referring specifically to houses. The expression

of second person prominence is common cross-linguistically in the distribution of passives or in word order, and the grammaticalization of this prominence could have occurred independently in each language. The semantics of the Yurok repetitive seem to have been borrowed from Karuk, but the form is archaic and existed (likely with slightly different semantics) before contact with Karuk.

Convergent syntactic changes in Northwestern California are triggered by contact, but do not necessarily involve the direct copying of surface syntax. This pattern is also characteristic of the Vaupés area. This is in stark contrast to the situation in Kupwar, where frequent code-switching has led to morpheme-by-morpheme translatability in many constructions among local varieties of Marathi, Kannada and Urdu (as seen in 3.3 above). The Balkan linguistic area also has several instances of the convergence of surface syntactic structure. This leads a prominent Balkanist to state that “the syntactic similarities found in Sprachbünde and other contact situations tend to be superficial in nature and are really a matter of a convergence in surface structure” (Joseph 2001:22). Some examples of the convergence of surface syntactic structure in the Balkans are listed in (10).

- (10) *Balkanisms involving convergence of surface syntax*
replacement of infinitive constructions with subordinative ones⁸
postposed definite article
periphrastic future with 'want'
periphrastic perfect with 'have'
pleonastic pronouns

(Thomason 2001:109)

This is not the case in the Vaupés or in Northwestern California, and is apparently only true in a subset of contact situations.

4.2 Sociolinguistic profile

The three language contact situations described in §§3.1-3.3 were chosen because a description is available not only of the linguistic areal features, but of the sociolinguistic factors that led to the development of grammatical convergence. There are several such factors that are important in determining the linguistic outcomes of language contact. These factors were equally important in the development of prehistoric linguistic areas, though they are not directly observable.

The following sections elaborate on the sociolinguistic attributes of the Northwestern California linguistic area: number of languages involved in contact situation (4.2.1), relative size of the linguistic communities (4.2.2), time depth of contact (4.2.3), proficiency of bilinguals (4.2.4), proportion of the population that was bilingual (4.2.5), relationships among linguistic communities (4.2.6), and indications of language attitudes (4.2.7).

⁸ Thomason (2001:109) compares 'Croatian' *rada sam govoriti* ('I am glad to speak,' with infinitive *govoriti*) with 'Serbian' *rada sam da govorim* (lit. 'I am glad that I speak,' with subordinator *da* and the first person inflected verb *govorim*). This feature is discussed extensively in Joseph (1983).

4.2.1 Number of languages

I have included six languages in this study of Northwestern California (Tolowa, Hupa, Chimariko, Karuk, Yurok and Wiyot).⁹ Each village or district, however, has a unique pattern of multilingual relations with its neighbors. What is crucial about the number of languages in contact in Northwestern California is that it is generally more than two. In any particular village, the number of languages commonly in contact would have ranged from two to approximately five. These languages were from three different linguistic families, and even those which are in the same family are not close enough to be mutually intelligible.¹⁰ The profile of contact-induced language change in Northwestern California and elsewhere in linguistic areas demonstrates that the typology developed for two-language contact situations in Thomason and Kaufman (1988) cannot be extended to situations with more than one language in contact.

4.2.2 Relative population size

The relative size of population of speakers can influence the outcome of language contact. An overwhelmingly large population might be the source for borrowings into a smaller minority language. In cases of language shift, a large indigenous population shifting to a dominant language will create a unique local variety of that language, with interference features.

⁹ This number is arbitrary. A more focused study might be restricted to Yurok, Hupa and Karuk, while a more widespread study might include the more Southerly California Athapaskan dialects, Shasta and Wintu.

¹⁰ This is in contrast to the Vaupés region, where the languages of the East Tucanoan family are much less differentiated than the Algonquian or Hokan languages.

Cook's (1956) estimates of the population of Northwestern California linguistic groups are repeated in (11) from Chapter 3, §2.1:

(11) *Indigenous population according to Cook (1956)*

Yurok:	3100
Wiyot:	3300
Karuk:	2700
Hupa:	2000
Tolowa:	2400
(None for Chimariko)	

(Cook 1956:127)

The population size of each group is similar, with the maximal difference (between Hupa and Wiyot) of 1300. Since these estimates are subject to many questions of accuracy, they may be considered practically equal. As a result, there was no language that was particularly dominant in terms of number of speakers. This situation contributed to the relatively egalitarian relationships among linguistic communities.

4.2.3 Time depth of contact

The archaeological record in Northwestern California indicates that trade and other types of cultural interaction were prevalent from the earliest strata. Obsidian and dentalia in particular were traded long distances. From the time of the Gunther Pattern (ca. 900 C.E.), the archaeological profile of Northwestern California shows a great many commonalities that indicate people were in contact with each other. All this indicates that language contact in Northwestern California is not a recent phenomenon, but was operative for at least a millennium. The kinds of convergent morphosyntactic changes that Northwestern California languages have undergone is consistent with this time depth.

4.2.4 Incidence of bilingualism

There are no firm estimates of the proportion of the population in Northwestern California that was bilingual. In comparison to each of the areas discussed in §§3.1-3.3, however, it seems that the proportion is lower. Bilingualism is reportedly near universal in the Vaupés, in most areas in New Guinea, and among males in the village of Kupwar. In contrast, the identification of bilingual individuals in Northwestern Californian narratives indicates that bilingualism was rare enough to be considered a remarkable characteristic of a particular individual. Furthermore, the frequent mention of the use of translators indicates that bilingualism was not so common as to obviate the need for translators. In the following account of Yurok women visiting a Wiyot dance, two people interpret for them.

The three Yurok women visitors were led in and given a front seat. The hostesses called over a woman who could talk Yurok because they thought that the guests might want to know about the dance. This woman was called Kwohtois-ôr because her mother was from the Wiyot house or settlement Kwohtoi on Mad River ... When the visitors got up to leave at the end of a dance, a Wiyot in the center began to address them and called a man named Asegi-ôr (for the reason that his mother was from Asegi near Arcata) to interpret.

(Spott and Kroeber 1942:179)

In this case both interpreters have mothers from towns near Yurok territory (in the northern part of Wiyot territory), reflective of a higher incidence of bilingualism in Yurok in that region (as opposed to the more southerly Eel River region, where there was more contact with speakers of Athapaskan dialects than with speakers of Yurok).

Waterman and Kroeber's (1934) study of Yurok marriages¹¹ found that approximately nine per cent (34 out of 390) of Yurok men married women from a different linguistic group. The children of such marriages were likely to be bilingual. The percentage of inter-lingual marriage differs from district to district. In the area of Rek'woy, for example, 10 out of 52 marriages (almost twenty per cent) were with a speaker of a different language; 9 of these were with a Tolowa speaker. In contrast, only 5 out of 102 (just under five per cent) marriages in Pekwon were inter-lingual. A single inter-lingual marriage may expose an entire extended family to a new language, but it is most likely that only the children actually were fluent in both parents' languages. Several accounts of bilingualism (see Chapter 3, §3) indicate that the bilingual individual learned their 'second' language from his or her mother. To summarize, the percentage of bilingual individuals cannot be known exactly. If we extrapolate from Waterman and Kroeber's data on Yurok marriages (admittedly with questionable accuracy), the proportion of bilinguals varied between approximately one tenth and one third. This is markedly lower than the incidence of bilingualism in the Vaupés Basin, New Guinea, or the village of Kupwar.

4.2.5 Proficiency of bilinguals

The relative proficiency of bilinguals in each of their languages can have profound effects on the outcomes of language contact. Rapid shift accompanied by limited knowledge of the target language can lead to significant interference features, creolization or simplification (especially the loss of distinctions not present in the original

¹¹ The information for this study was collected in 1909, and reflects marriages that occurred before this time.

language). In the case of Northwestern California, convergent changes are not simplificatory and are not indicative of language shift. Therefore there is no reason to suspect that limited knowledge of a target language played a role in the development of language contact features. Further, ethnographic accounts of bilingualism frequently mention the ‘mixed’ parentage of a bilingual person, indicating that the most common setting in which a bilingual learns two languages is from one’s parents in the home. This setting, more than that of a trade, travel or work setting, is conducive to developing fluent knowledge of both languages of a bilingual. We can therefore assume that, while bilinguals likely were dominant in one language over another, they tended to be relatively fluent in their knowledge of two or more languages.

4.2.6 Egalitarianism

The relations among languages in Northwestern California can be described as egalitarian. This is manifested in several ways: multidirectional bilingualism, absence of diglossia, absence of language shift, and absence of a lingua franca.

The one exception to all of these statements is the sociolinguistic position of Chimariko. As was discussed previously, Chimariko was losing speakers to Hupa and Wintu at the time of European contact. This was likely a process that began before contact, since it was observed in the late nineteenth century (Powers 1877:87-95). Bilingualism between Chimariko and neighboring languages was unidirectional (Chimariko speakers also spoke Hupa, Shasta or Wintu, but speakers of these languages tended not to speak Chimariko).

Among the remaining five languages, however, there are no evident patterns of unidirectional bilingualism. It was not the case, for example, that Hupa speakers regularly

also knew Yurok but not vice versa. Since there are no studies of marriages in other areas comparable to Waterman and Kroeber's study of Yurok marriages, the evidence for this multidirectionality is only anecdotal. Accounts of multilingualism were discussed in Chapter 3, §3.

Multilingualism in Northwestern California can be characterized by the absence of diglossia. There were no languages that were restricted to particular domains such as trade, religion or home life. There was also not a single lingua franca. Instead, all languages were used in various aspects of everyday and ceremonial life, and negotiations about how to communicate with speakers of other languages were localized. This sort of egalitarianism was also found in the Vaupés, but in Kupwar there was pronounced diglossia and Marathi was a lingua franca. This meant that native speakers of Marathi were under less pressure to speak other languages than vice versa.

4.2.7 Indications of language attitudes

The almost complete absence of lexical borrowing in Northwestern California can only be attributed to a deliberate effort to avoid 'mixing' languages. The propensity to avoid lexical borrowing and instead use language-internal resources is characteristic of some speech communities. Such language attitudes have been observed among Athapaskan peoples in general (Brown 1999), Montana Salish (Thomason 2001:80), and in the Vaupés (Aikhenvald 2001). In cases of language contact where speakers have a strong motivation to retain the 'emblematicity' of their primary language, contact-induced morphosyntactic changes may still proceed because they do not threaten 'emblematicity.' Lexical borrowing, however, may be viewed as the improper importation of foreignness into one's language. The distinction between convergence at the level of semantics and

pragmatics and copying of surface syntactic structure is also indicative of different attitudes, ideologies and cultures of language. The avoidance of isomorphism and lexical borrowing is an expression of the motivation to keep codes separate rather than minimize differences between them (as described in the Vaupés by Sorensen 1967 and Aikhenvald 2001, in New Guinea by Sankoff 1980 and Ross 1987 and in Hill's 2000 study of Uto-Aztecan dialectology).

4.3 Functional convergence in Northwestern California

In the typology of Thomason and Kaufman (1988), all language contact can be subsumed under either borrowing or interference. Borrowing invariably includes lexical borrowing, and interference invariably includes phonetic and phonological interference. An additional phenomenon of *functional convergence* fits into neither category, since it has neither lexical borrowing nor phonetic and phonological interference. Convergence¹² is change that makes two languages more similar to each other. There are several sub-types of convergence as evidenced by case studies. By *functional convergence* I mean specifically the convergence of semantic categories without the convergence of form. This phenomenon can be considered a sub-type of convergent changes referred to as *convergence* or *metatypy*. Languages come to express the same semantic categories, but do not necessarily become similar in their surface syntax. I refer to the convergence of surface syntax as *isomorphism*.

¹² In the terminology of Ross (1996, 2003) *metatypy*, which he defines as “change in morphosyntactic type which a primary lect undergoes as a result of its speakers’ bilingualism in a secondary lect” (2003:183).

Languages can converge at the level of phonetics, semantic and pragmatic structure, or syntactic structure, and convergence at these levels does not necessarily coincide. In the Indian village of Kupwar, Gumperz and Wilson (1971) observed isomorphic syntactic structure, phonetic similarities and substantial lexical borrowing among several languages. Ross (1996, 2003) and Thurston (1982, 1987, 1994) observed grammatical and semantic similarities among neighboring languages in New Guinea, sometimes without phonological convergence. Aikhenvald (2001) observed convergence at all levels of grammar in the Vaupés region of Amazonia without lexical borrowing, and despite a strong cultural prohibition against ‘mixing’ of languages. In each of these cases, grammatical convergence has occurred in a multilingual situation. In the case of Northwestern California, all the convergence has taken place at the level of morphosyntax, without lexical borrowing or local phonological convergence.

The absence of isomorphic convergence can most readily be attributed to a variety of linguistic practices that result from what I have called a localist culture of language (extending the terminology of Hill 2000), of which there are two essential elements: long term language maintenance resulting from egalitarian relationships among linguistic groups, and a prohibition against recognizable ‘mixing’ of languages. In a community with a localist culture of language, language maintenance is the norm, as there is no pressure from a dominant culture to shift languages. The kinds of convergent changes that occur do not threaten the ‘emblematicity’ of a language (as lexical borrowing, phonetic convergence and direct copying of surface syntactic structure can be said to do).

In contrast, in a community with a distributed culture of language, resources from different languages may be combined more freely, including in the practice of code-

switching. Code-switching can lead to isomorphism. Code-switching was observed in Gumperz and Wilson's study of Kupwar, and it was only in these code-switching situations that the local convergent varieties were used. (Standard, less convergent varieties of each language were also used in Kupwar). Aikhenvald observed a strict prohibition *against* code-switching in the Vaupés. In the case of Northwestern California, there is only negative evidence regarding code-switching. There is no mention in the ethnographic record of the use of code-switching as a bilingual practice, nor is there any documentation of code-switching language use. The frequency of code-switching apparently affects the profile of linguistic convergence in linguistic areas, with frequent code-switching contributing to the development of isomorphic constructions.

5 Conclusion

A comparison of Northwestern California to other linguistic areas demonstrates that different profiles of contact-induced change correlate with different sociolinguistic attributes, including those discussed in §4. The profile of Northwestern California (and other linguistic areas) also demonstrates that the typology proposed by Thomason and Kaufman (1988) is inadequate for describing contact-induced linguistic change in an egalitarian linguistic area. Characterizing language contact in a linguistic area inevitably involves describing the unique sociolinguistic history of that area.

In this chapter I have compared the profile of Northwestern California as a linguistic area to other situations of language contact, both in terms of linguistic areal features and in terms of the sociolinguistic context of language contact. The egalitarian relationship among linguistic communities, absence of language shift, absence of a regional lingua franca, and apparent cultural prohibition against language mixing have all influenced the

outcomes of language contact in Northwestern California. The convergent changes in Northwestern California are diverse in their grammatical expression, and do not lead to isomorphism (formal equivalency). Instead, they lead to semantic equivalency (via a process I have called *functional convergence*) that does not necessarily co-occur with lexical borrowing or with phonological convergence.

5.1 Functional convergence versus isomorphism

Long-term multilateral multilingualism is problematic for a sociolinguistic typology of language contact that considers only pressure from culturally or politically dominant groups, and does not include the possibility of egalitarian relationships among linguistic communities. It is true that most language contact situations are characterized by such pressure, but not all are. Weinreich's (1953) and Thomason and Kaufman's (1988) assertions of the importance of sociolinguistics in understanding language contact opened up a new avenue of research – defining and describing these sociolinguistic factors, and how they influence the linguistic results of language contact. This is largely a matter of conducting case studies of individual language contact situations. The study of contemporary language contact situations is most fruitful in this respect, since it allows for extensive ethnographic observation and participant observation. In the case of Northwestern California the sociolinguistic situation has been irrevocably affected by the dominance of English-speaking American culture. We can project into the past, however, the importance of sociolinguistic factors, language ideology, and linguistic practice in affecting language change, including contact-induced change.

Contact-induced changes in Northwestern California can be characterized as convergence in the expression of semantic and pragmatic categories. They do not involve

the diffusion of surface syntactic categories, and thus do not necessarily result in convergence of syntactic form (as is found in Kupwar, in Asia Minor Greek,¹³ and to a lesser extent in the Balkan linguistic area). In Northwestern California and in other areas in which convergence of meaning predominates over convergence of form (the Vaupés, many contact situations in New Guinea), an egalitarian relationship among linguistic communities prevails — expressed by multi-directional multilingualism, long-term language maintenance, and relatively equal social and political power among linguistic communities. In contrast, in cases of extensive copying of surface syntactic structure, there is a hierarchical or hegemonic relationship among linguistic communities expressed through class-association (as in Kupwar), pressure to shift (as in Asia Minor Greek) or a hegemonic or colonial language (as Turkish was in the Balkan area).

One specific consequence for Thomason & Kaufman's typology is that language maintenance need not be associated with lexical borrowing.¹⁴ Northwestern California communities maintained their distinct languages during hundreds of years of contact with and multilingualism in other languages. Since a large amount of lexical borrowing can lead to phonological changes (such as introduction of new phonemes via borrowed words), the propensity to avoid lexical borrowing can have further structural consequences for the profile of contact-induced change.

¹³ Asia Minor Greek is a case study in Thomason and Kaufman (1988:215-22).

¹⁴ This criticism is also noted in Ross (1996:209).

5.2 Sociolinguistic perspectives on language contact

Despite some early attempts by linguists to define linguistic constraints on language contact, extra-linguistic factors have proven more productive in the description of the mechanisms and outcomes of contact.

These extra-linguistic factors intersect with common themes in contemporary sociolinguistics: the balance of power among linguistic communities, expressed in terms of political power, prestige or control of resources, and the expression of individual and group identity and ideology through linguistic practice. Such factors are satisfactorily observable only in ongoing contact situations. Contemporary sociolinguistic studies such as Labov (1962), Eckert (1989, 2000) and Hill (2000) demonstrate the importance that an individual's orientation toward society can have in determining the spread of linguistic innovation. Expressions of power and ideology also affect the outcomes of language contact. In addition to these factors of language attitudes and ideology, more tangible factors such as the number of languages involved in the contact situation, the domains in which these languages are used, and the proportion of a given population that is bilingual affect the outcomes of language contact.

In order to demonstrate the importance of sociolinguistic circumstances in determining the outcomes of language contact, Thomason and Kaufman considered a single factor: 'intensity' of cultural contact. They purposefully avoided complicating the notion of 'intensity,' using the term as a cover-term for a host of sociolinguistic factors. This leaves open an avenue of research to further examine and describe specific aspects of sociolinguistic factors that are relevant in language contact. In the previous section, some of these factors were outlined in relation to Northwestern California and other

linguistic areas. The following is a list of relevant factors, though it is certainly not complete:¹⁵

(12) *Sociolinguistic factors relevant to the outcomes of language contact*

- Number of languages involved
- Time depth of contact
- Proportion of the population that is bilingual
- Diglossia or absence thereof
- Proficiency of speakers in each language
- Relative social positions of the languages involved
- Presence or absence of a lingua franca
- Attitudes toward borrowing, code-switching, and variation
- Ideology with respect to group identity

Since sociolinguistic factors are instrumental in determining the linguistic outcomes of language contact, a complete typology of language contact will have to take them into account. Since many of these factors are gradient in nature, they combine in complex ways and do not lend themselves to a simple framework of only a few types. Linguistic areas remain “notoriously messy.” It is possible, however, to make a few broad generalizations about pathways to grammatical convergence. Long-term situations of egalitarian relationships among linguistic communities result in functional convergence carried out by language-internal coherent reanalysis and extension (not necessarily co-occurring with lexical borrowing), while situations of cultural dominance including pressure to shift (and resistance of this pressure) result in the copying of surface syntactic structure and direct borrowing of lexicon

Examining a pre-colonial language contact situation has made it clear that the sociolinguistic circumstances of the colonial (and post-colonial) era have shaped the

¹⁵ Weinreich (1953:3), Silva-Corvalán 1997:227-8 Thomason (2001:66), and Ross (2003:190) discuss similar lists of factors.

theoretical discussion of language contact. Most language contact situations involve unequal distribution of political power, and contemporary situations of relative egalitarianism and security of resources that allow for long-term language maintenance are few. The type of contact-induced linguistic change that emerges from such a situation of stable diversity differs from that which emerges in response to 'cultural pressure' from a politically dominant linguistic community. These differences can be found in specific linguistic practices that emerge in situations of egalitarianism: passive bilingualism rather than code-switching; loan-translations rather than lexical borrowing; proficiency rather than limited access; esoterism rather than exoterism.

1 Main findings

Northwestern California is a small linguistic area located within the overlapping boundaries of several larger macro-areas. Long-standing multilateral multilingualism has led to substantial contact-induced morphosyntactic changes in Northwestern California languages, though lexical borrowing is quite limited and phonological convergence is absent. Northwestern California remains (genetically and typologically) a linguistically diverse area. The morphosyntactic convergence in Northwestern California is best characterized as *functional convergence* of semantic and pragmatic categories, not the convergence of surface syntactic structure that leads to isomorphism.

The different profiles of language contact that emerge in linguistic areas can be correlated to different sociohistorical contexts. In Northwestern California, relations among linguistic communities were predominantly egalitarian. There was no single group that dominated numerically or politically. There was no single prestige language or lingua franca. Patterns of multilingualism were local, depending on the circumstances in a particular village. This is in sharp contrast to many contemporary situations of language contact, which involve pressure to shift to a dominant language. It is in this latter situation that one finds the profile of borrowing as defined by Thomason and Kaufman (1988).

The profile of language contact in Northwestern California has much in common with that of other pre-colonial egalitarian contact situations. The pattern of functional

convergence that I describe in Chapter 4 is also found in the Vaupés Basin area of Amazonia (as described in Aikhenvald 2001) and in parts of New Guinea (as described in Ross (1996, 2001, 2003).

2 Summary of previous chapters

Chapter 1 introduced the languages discussed and gives some background on the archaeological prehistory of Northwestern California. The six languages included in this study are Tolowa, Hupa (Athapaskan), Karuk, Chimariko (Hokan), Yurok and Wiyot (Algic). The archaeological literature supports a particular migration sequence into Northwestern California, with Hokan-speakers aboriginal, and Algic speakers migrating from the North, followed by Athapaskan speakers. Relative to Southern California, the immediate coastal area was settled late, and this can possibly be attributed to the abundance of resources inland. The extensive contact that resulted in the Northwestern California linguistic area persisted for approximately the last millennium. The sources for this study include early twentieth century field notes of A.L. Kroeber, R.B. Dixon, J.P. Harrington, P.E. Goddard, and G.A. Reichard as well as published descriptions and the author's fieldwork on Yurok.

Chapter 2 discussed linguistic contact features in Northwestern California. The following features have likely developed under the influence of contact within Northwestern California (or in some cases are characteristic of a wider area):

(1) *Contact features in Northwestern California*

Consonant inventory:

- Three stop series (Tolowa, Hupa, Chimariko)
- Uvular consonants (Hupa, Chimariko)
- Voiceless laterals (Tolowa, Hupa, Yurok, Wiyot)
- Retroflex apical stops (Tolowa [affricate], Chimariko)
- Lack of l~r distinction (Tolowa, Hupa, Karuk)
- Diminutive consonant symbolism (all)
- Diminutive affix of similar shape (Hupa, Wiyot, Karuk)
- Local influences in numeral systems (discussed in Chapter 2, §2.1)
- Similarities in directional terminology (all)
- Repetitive reduplication (Yurok, Karuk, Chimariko)
- Second person prominence (Yurok, Karuk, Chimariko)
- Classifier for 'house' (Yurok, Wiyot, Karuk)
- Numeral classifiers (Yurok, Wiyot, incipient in Karuk, Hupa)
- Preverbal particles (Yurok, Wiyot, Karuk)
- Verb initial word order (Yurok, Wiyot, to some extent Karuk and Hupa)
- Frequent loan translations
- Shared euphemisms

These features are spread throughout the grammar, affecting morphology, semantics and discourse pragmatics. Their formal expression in each language, however, is diverse.

Chapter 3 investigated the sociolinguistics of Northwestern California, including ethnonyms, multilingualism and dialectology. The people of Northwestern California had diverse interpretations of ethnicity, and recognized groups both smaller and larger than those designated by contemporary 'tribal' terminology. A substantial portion of the chapter is devoted to the dialectology of Wiyot, Karuk and Chimariko. Early twentieth century records provide evidence for previously unattested dialect variation and a downriver movement of linguistic innovation. A recent change of $m > \beta$ was taking place in Wiyot at the time of attestation, and $s > \theta$ was a recent change in Karuk.

In Chapter 4 I discussed theoretical implications of the characteristics of the Northwestern California linguistic area. In particular I addressed the typology of

Thomason and Kaufman (1988), which divides language contact into *borrowing* and *shift-induced interference*. This commonly cited typology is limited in three respects that make it inadequate for describing contact situations such as that in Northwestern California. First, this typology is most relevant for situations in which there is a politically or socially dominant language. In Northwestern California, as in the Vaupés Basin of Amazonia and parts of Melanesia, there is a relatively egalitarian relationship among languages. Second, Thomason and Kaufman consider only one broad factor in their evaluation of sociolinguistic situations that influence the outcomes of language contact: ‘intensity’ of cultural contact. In order to better describe the sociolinguistics of language contact, this notion needs to be complicated and augmented with other relevant factors, including language attitudes, ideology and social network structure. Third, their typology is restricted to two-language contact situations. The profile of language contact in Northwestern California demonstrates that this typology cannot be extended to linguistic areas with more than two languages in contact.

3 Open questions

By focusing on a few languages rather than doing a broad survey, I have been able to provide many details on several of the contact-induced linguistic changes discussed in Chapter 2. This level of focus also allows for a more detailed examination of sociolinguistics than a broad survey would. This methodology has also left many open questions and avenues for further work. Some of the contact features discussed in Chapter 2 have a wider distribution outside of the immediate Northwestern California area, and in some cases this wider distribution may be due to language contact. A further consideration of the Northern California area (following up on Haas 1976) might reveal

that features I have identified as being characteristic of Northwestern California (especially repetitive reduplication and second person prominence) are in fact characteristic of a much larger area.

Conversely, if one were to focus on an even smaller area, additional patterns might become apparent. In-depth analysis of the texts of a particular population of bilingual speakers or even of a single person (such as Mary Marshall, bilingual in Hupa and Yurok) might reveal further the actual mechanism of transfer of contact features in Northwestern California. Focusing on kin relations a particular village (such as Wechpek, a Yurok village located near Hupa and Karuk-speaking territory) would allow one to determine more precisely the extent of multilingualism in a 'border' community.

Abbreviations used for consultants' names

AB	Abe Bush (Chimariko)
B	Mrs. Barto (Wiyot)
BJ	Birdie James (Wiyot, Yurok)
DP	Della Prince (Wiyot)
DT	Doctor Tom (Chimariko)
ER	Several speaker of the Eel River area (Wiyot)
HB	Unidentified speaker(s) of the Humboldt Bay area (Wiyot)
JJ	Jerry James (Wiyot)
LM	Lucy Montgomery (Chimariko)
M	Mary, aunt of Jerry James (Wiyot)
PD	Polly Dyer (Chimariko)
S	Mrs. Searson (Wiyot)
SN	Sally Noble (Chimariko)
W	Unidentified speaker(s) of the Eel River area (Wiyot)
WB	Warren Brainard (Wiyot)

Kroeber's unpublished texts

A.L. Kroeber's unpublished texts are from his field notebooks in the archives of the Bancroft Library (see Kroeber ms. in works cited) and audio recordings in the archives of the Hearst Museum, both in Berkeley. Notebook and carton numbers refer to the originals (unseen), and film numbers refer to the microfilm copies (reel and frame numbers of Bancroft library call number FILM 2049). In the body of the dissertation, the citation abbreviations listed below are preceded by ALK (e.g. ALK-A1).

- A1 Amits of Kep'el, *Medicine not to see rattlesnake*, 1906, notebook 67:30 (carton 12, folder 21); film 127:637
- DJ1 Domingo Jack of Wechpus, *Buzzard's Medicine*, 1907, notebook 75:19-31 (carton 12, folder 27); film 128:172-84. Selection published in Kroeber 1911:425-6. Transcribed and translated by A. Garrett, based on a wax cylinder recording in the collection of the University of California, Berkeley Hearst Museum (catalogue #24-985).
- DJ2 Domingo Jack of Wechpus, *Hunting lands belonging to Weitchpec*, 1907, notebook 74:2-13 (carton 12, folder 26); film 128:83-94. Transcribed and translated by A. Garrett, based on a wax cylinder recording in the collection of the University of California, Berkeley Hearst Museum (catalogue #24-987).
- K1 K'erep of Trinidad (Trinidad Jim's wife), *Historical account of destruction of village on Stone Lagoon*, 1907, notebook 78:2-16 (carton 12, folder 30); film 128:266-80. Transcribed and translated by A. Garrett, based on a wax cylinder recording in the collection of the University of California, Berkeley Hearst Museum (catalogue #24-1034).

Abbreviations used in works cited

AA	<i>American Anthropologist</i>
AL	<i>Anthropological Linguistics</i>
IJAL	<i>International Journal of American Linguistics</i>
UCAR	<i>University of California Anthropological Records</i> . Berkeley: University of California Press.
UCPA	<i>University of California Publications in Anthropology</i> . Berkeley: University of California Press.
UCPAAE	<i>University of California Publications in American Archaeology and Ethnology</i> . Berkeley: University of California Press.
UCPL	<i>University of California Publications in Linguistics</i> . Berkeley: University of California Press.

Works cited

- Aikhenvald, Alexandra Y. 2002. *Language contact in Amazonia*. Oxford and New York: Oxford University Press.
- Aoki, Haruo. 1973. Nez Perce Grammar. *UCPL* 62.
- Baker, Marc A. 1981. The ethnobotany of the Yurok, Tolowas and Karok Indians of Northwestern California. M.A. thesis, Humboldt State University.
- Bauman, James. 1980. Chimariko placenames and the boundaries of Chimariko territory. *American Indian and Indoeuropean Studies*, ed. K. Klar, M. Langdon, S. Silver, 11-29. The Hague: Mouton.
- Bauman, James and Shirley Silver. ms. 1975. An areal survey of phonological processes in Northern California languages. Handout from a given at the annual meeting of the American Anthropological Association, 1975.
- Baumhoff, Martin A. 1978. Environmental background. In Heizer, ed., 16-24.
- Beck, David. 2000. Grammatical convergence and the genesis of diversity in the Northwest Coast Sprachbund. *AL* 42:147-214.
- Bellwood, Peter. 1997. Prehistoric cultural explanations for widespread linguistic families. *Archaeology and Linguistics: Aboriginal Australia in Global Perspective*, ed. by P. McConvell and N. Evans, 123-134. Melbourne: Oxford University Press.
- Berman, Howard. 1982a. A supplement to Robins' Yurok-English lexicon. *IJAL* 48:197-222.
- _____. 1982b. Two phonological innovations in Ritwan. *IJAL* 48:412-20.
- _____. 1984. Proto Algonquian-Ritwan verbal roots. *IJAL* 50:335-42.
- _____. 1985. Consonant lengthening in Chimariko. *IJAL* 51:347-9.
- _____. 1986. A note on the Yurok diminutive. *IJAL* 52:419-22.
- _____. 1990. New Algonquian-Ritwan cognate sets. *IJAL* 56:431-34.
- Berman, Howard, ed. 2001a. Yurok texts. In Golla and O'Neill (eds.), 1015-38.
- _____. 2001b. Chimariko linguistic material. In Golla and O'Neill (eds.), 1039-76.
- Bickerton, Derek. 1981. *Roots of language*. Ann Arbor, MI: Karoma.

- Blevins, Juliette. 2002. Notes on Yurok glottalized consonants. In Buszard-Welcher and Hinton, eds., 1-18.
- _____. 2003. The phonology of Yurok glottalized sonorants: Segmental fission under syllabification. *IJAL* 69:371-96.
- Bloomfield, Leonard. 1946. Algonquian. *Linguistic structures of Native America*, ed. by Harry Hoiyer, 85-129. New York: The Viking Fund.
- Boas, Franz. 1911. Introduction. In Boas, ed. 1911.
- Boas, Franz, ed. *The Handbook of American Indian Languages*, part 1, 5-83. Washington, DC: Government Printing Office.
- Bommelyn, Loren. 1997. *The Prolegomena to the Tolowa Athabaskan Grammar*. M.A. thesis, University of Oregon.
- Bright, Jane Orstan. 1964. The phonology of Smith River Athapaskan (Tolowa). *IJAL* 30:101-7.
- Bright, William. 1954. Some Northern Hokan Relationships: A Preliminary Report. *UCPL* 10(1):63-7.
- _____. 1957. The Karok language. *UCPL* 13.
- _____. ms. 2004. "Analyzability" of nouns in Northwestern California. Paper presented at Language Ecology Symposium celebrating Murray B. Emeneau's 100th birthday, Feb. 20-21, 2004. University of California, Berkeley.
- Bright, William and Joel Sherzer. 1976. Areal features in North American Indian languages. *Variation and change in language: Essays by William Bright*, ed. by Anwar C. Dil. Stanford: University Press. 228-68.
- Bright, William and Jane O. Bright. 1965. Semantic structures in Northwestern California and the Sapir-Whorf hypothesis. *AA* 67:249-58.
- Brody, Jill. 1987. Particles borrowed from Spanish as discourse markers in Mayan languages. *AL* 29:507-21.
- _____. 1995. Lending the 'Unborrowable': Spanish discourse markers in Indigenous American languages. *Spanish in four continents: Studies in language contact and bilingualism*, ed. by Carmen Silva-Corvalán, 132-47. Washington, DC: Georgetown University Press.
- Brown, Cecil. 1999. *Lexical acculturation in Native American languages*. (Oxford studies in anthropological linguistics 20). New York: Oxford University Press.
- Buckley, Thomas. 1984. Yurok speech registers and ontology. *Language in Society* 13:467-88.
- _____. 1989. Kroeber's theory of culture areas and the ethnology of northwestern California. *Anthropological Quarterly* 62:15-26.
- _____. 2002. *Standing Ground: Yurok Indian spirituality, 1850-1990*. Berkeley, University of California Press.
- Buszard-Welcher, Laura and Leanne Hinton, eds. 2000. *Proceedings of the Meeting of the Hokan-Penutian Workshop* (Survey of California and Other Indian Languages, Report 11). Berkeley, CA.: Survey of California and Other Indian Languages.
- Campbell, Lyle. 1987. Syntactic change in Pipil. *IJAL* 53:253-280.
- _____. 1989. On proposed universals of grammatical borrowing. *Historical linguistics 1989: Papers from the 9th International Conference on Historical Linguistics*,

- New Brunswick, 14-18 August 1989*, ed. by Henk Aertsen and Robert J. Jeffers, 91-110. Philadelphia: John Benjamins.
- _____. 1997. *American Indian Languages: The historical linguistics of Native America*. New York: Oxford University Press.
- Campbell, Lyle and Marianne Mithun, eds. 1979. *The languages of Native America: Historical and comparative assessment*. Austin: University of Texas Press.
- Campbell, Lyle, Terrence Kaufman and Thomas C. Smith-Stark. 1986. Meso-America as a Linguistic Area. *Language* 62:3.530-70.
- Chambers, J. K. 2003. *Sociolinguistic theory*. Oxford: Blackwell.
- Chartkoff, Joseph L. and Kerry Kona Chartkoff. 1975. Late period settlement of the middle Klamath River of Northwest California. *American Antiquity* 40:172-9.
- _____. 1984. *The archaeology of California*. Stanford: Stanford University Press.
- van Coetsem, Frans. 1988. *Loan phonology and the two transfer types in language contact*. Dordrecht: Foris.
- _____. 2000. *A general and unified theory of the transmission process in language contact*. Heidelberg: Winter.
- Collins, James. 1985. Pronouns, markedness and stem change in Tolowa. *IJAL* 51:368-72.
- _____. 1989. Nasalization, lengthening, and phonological rhyme in Tolowa. *IJAL* 55:326-40.
- Conathan, Lisa. 2002. Pragmatic convergence: Person hierarchies in Northern California. *UBC Working Papers in Linguistics*, Proceedings of the Seventh Workshop on Structure and Constituency in the Languages of the Americas (WSCLA 7).
- _____. forthcoming. Classifiers in Yurok, Wiyot and Algonquian. To appear in the proceedings of the 30th Annual Conference of the Berkeley Linguistics Society.
- Conathan, Lisa and Esther Wood. 2003. Repetitive reduplication in Yurok and Karuk: Semantic effects of contact. *Papers of the Thirty-fourth Algonquian Conference*, ed. H.C. Wolfart, 19-33. Winnipeg: University of Manitoba.
- Cook, S.F. 1956. The aboriginal population of the North Coast of California. *Anthropological Records* 16:81-129.
- Crawford, James M. 1976. A Comparison of Chimariko and Yuman. *Hokan Studies*, ed. by Margaret Langdon & Shirley Silver, 177-92. The Hague: Mouton.
- Croft, William. 1994. Semantic universals in classifier systems. *Word* 45:145-71.
- Cusic, David Dowell. 1981. *Verbal plurality and aspect*. Ph.D. dissertation, Stanford University.
- Dahlstrom, Amy. 1995. *Topic, focus and other word order problems in Algonquian*. Winnipeg: Voices of Rupert's Land.
- Davidson, William L., L. W. Elford and Harry Hoijer. 1963. Athapaskan classificatory verbs. *Studies in the Athapaskan languages*, ed. Harry Hoijer et al. *UCPL* 29.30-41.
- Dixon, R.B. 1910. The Chimariko Indians and language. *UCPAAE* 5:5.
- Dixon, R.B. and A.L. Kroeber. 1903. The native languages of California. *AA New series*, 5(1):1-26
- _____. 1913a. Relationship of the Indian Languages of California. *Science* 37:225.
- _____. 1913b. New Linguistic Families in California. *AA* 15:647-55.

- Driver, Harold. E. 1939. Culture element distributions: X—Northwest California. *UCPAAE* 1(6):297-434.
- Eckert, Penelope. 1989. *Jocks and burnouts: Social categories and identity in the high school*. New York: Teachers College Press.
- . 2000. *Linguistic variation as social practice: The linguistic construction of identity at Belten High*. Malden, MA: Blackwell.
- Edgerton, Faye E. 1963. The tagmemic analysis of sentence structure in Western Apache. In Hoijer, Harry et al., 102-48.
- Elsasser, A.B. 1965. *The Archaeology of the North Coast of California*. Ph.D. dissertation, University of California, Berkeley.
- Elsasser, A.B. and R.F. Heizer. 1966. Excavation of two northwestern California coastal sites. *University of California Archaeological Survey Reports* 67:1-149.
- Emeneau, Murray. 1956. India as a linguistic area. *Language* 32:3-16.
- Enfield, Nicholas J. 2003. *Linguistic epidemiology*. London and New York: Routledge.
- Erlandson, Jon M. and Michael A. Glassow. 1997. *Archaeology of the California coast during the Middle Holocene*. (Perspectives in California Archaeology, volume 4). Los Angeles: Institute of Archaeology, University of California.
- Fagan, Brian M. 2003. *Before California: An archaeologist looks at our earliest inhabitants*. Lanham, MD: Rowan & Littlefield.
- Foley, William. 1986. *The Papuan languages of New Guinea*. New York: Cambridge University Press.
- . 1991. *The Yimas language of New Guinea*. Stanford, CA: Stanford University Press.
- Garrett, Andrew. 2001. Reduplication and infixation in Yurok: Morphology, semantics, and diachrony. *IJAL* 67:264-312.
- . 2002. Coast Yurok. Handout from a presentation at the 50th Anniversary Celebration of the Survey of California and Other Indian Languages, June 8-9, 2002. Berkeley, CA.
- . forthcoming. The evolution of algic verbal stem structure: New evidence from Yurok. To appear in the proceedings of the 30th Annual Conference of the Berkeley Linguistics Society.
- Givón, T. and Loren Bommelyn. 2000. The evolution of de-transitive voice in Tolowa Athabaskan. *Studies in Language* 24:41-76.
- Goddard, Ives. 1966. Review of Teeter (1964). *IJAL* 32:398-404.
- . 1975. Algonquian, Wiyot, and Yurok: Proving a distant genetic relationship. *Linguistics and Anthropology: In honor of C. F. Voegelin*, ed. by M. Dale Kinkade, et al., 249-62. Lisse: Peter de Ridder Press.
- . 1984. Sapir's comparative method. *New Perspectives in language, culture and personality: Proceedings of the Edward Sapir Centenary Conference, Ottawa, October 1-3, 1984*, ed. by William Cowan, Michael K. Forster, and Konrad Koerner, 191-214. Amsterdam: John Benjamins.
- Goddard, Pliny Earle. 1903. Life and culture of the Hupa. *UCPAAE* 1(1):1-88.
- . 1904. Hupa Texts. *UCPAAE* 1(2):89-368.
- . 1905. Morphology of the Hupa language. *UCPAAE* 3:1-344.
- . 1911. Athapascan (Hupa). In Boas, Franz, ed., 85-158.
- . 1914. Chilula texts. *UCPAAE* 10(7):289-379.

- _____. ms. Various dates. Notes on California Athapaskan Geography. Manuscripts in the collection of the Bancroft Museum, University of California Berkeley.
- Golla, Victor. ms. 1985. Linguistic clues to the prehistory of northwestern California. Handout from a talk at the First California Indian Conference, Berkeley, October 18, 1985.
- _____. 1996. Sketch of Hupa, an Athapaskan language. *Handbook of North American Indians, vol. 17: Languages*, 364-89. Washington, DC: Smithsonian.
- _____. 2000. Language history and communicative strategies in Aboriginal California and Oregon. *Languages of the North Pacific Rim, vol. 5*, ed. by Osahito Miyaoka. Suita, Japan: Faculty of Informatics, Osaka Gakuin University.
- Golla, Victor and Sean O'Neill, eds. 2001. *Northwest California linguistics*. (The collected works of Edward Sapir, Volume 14). Berlin and New York: Mouton de Gruyter.
- Gould, Richard A. 1966. Archaeology of the Point St. George Site and Tolowa prehistory. *UCPA* 4.
- _____. 1972. A radiocarbon date from the Point St. George Site, Northwestern California. *University of California Archaeological Research Facility Contributions* 14:41-4.
- Grekoff, George. 1997. Surface-marked privatives in the evaluative domain of the Chimariko Lexicon. *The Hokan, Penutian & J.P. Harrington Conferences and the Mary R. Haas Memorial, June 28-29, 1996, University of California, Berkeley*, ed. by Leanne Hinton, 35-56. (Survey of California and Other Indian Languages, Report 10). Berkeley, CA.: Survey of California and Other Indian Languages.
- _____. ms. Various dates. Notes on the Chimariko language, in the collection of the University of California, Berkeley Survey of California and other Indian Languages.
- Gumperz, John J. and Robert Wilson. 1971. Convergence and Creolization: A case from the Indo-Aryan/Dravidian border in India. *Pidginization and Creolization of Languages*, ed. by Dell Hymes, 151-67. Cambridge: Cambridge University Press.
- Haas, Mary R. 1958. Algonkian-Ritwan: The end of a controversy. *IJAL* 24:159-73.
- _____. 1963. Shasta and Proto-Hokan. *Language* 39:40-59.
- _____. 1964a. California Hokan. *Studies in Californian Linguistics*, ed. William Bright. *UCPL* 34:73-87.
- _____. 1964b. Foreword to *The Wiyot Language*, by Karl Teeter. *UCPL* 37.
- _____. 1967. Language and taxonomy in Northwestern California. *AA* 69:358-62.
- _____. 1969. *The prehistory of languages*. (Janua linguarum. Series minor, nr. 57). The Hague: Mouton.
- _____. 1970. Consonant symbolism in Northwestern California: A problem in diffusion. *Languages and cultures of Western North America*, ed. Earl H. Swanson, Jr., 86-96. Pocatello: Idaho State University Press.
- _____. 1976. The Northern California linguistic area. *Hokan studies*, ed. Margaret Langdon and Shirley Silver, 347-59. The Hague: Mouton.
- _____. 1980. Notes on Karok internal reconstruction. *American Indian and Indoeuropean studies: Papers in honor of Madison S. Beeler*, ed. Kathryn Klar, Margaret Langdon and Shirley Silver, 67-76. The Hague: Mouton.

- _____. ms. Various dates, 1950-60. Field notes on Yurok, in the collection of the University of California Survey of California and Other Indian Languages.
- Harrington, John Peabody. 1932. *Tobacco among the Karuk Indians of California*. (Bureau of American ethnology. Bulletin 94). Washington, D.C.: U.S. Government Printing Office.
- _____. ms. Various dates. *The papers of John Peabody Harrington*. Cited by microfilm reel (Series 690510) and frame. Originals are in the collection of the Smithsonian Institution, Washington, D.C.
- Harris, Alice and Lyle Campbell. 1995. *Historical syntax in cross-linguistic perspective*. Cambridge and New York: Cambridge University Press.
- Haugen, Einar. 1950. The analysis of linguistic borrowing. *Language* 26:210-31.
- Heath, Jeffrey. 1978. *Linguistic Diffusion in Arnhem Land*. Canberra: Australian Institute of Aboriginal Studies.
- Heizer, Robert F. (ed.). 1978. *California*. (Handbook of North American Indians, volume 8). Washington: Smithsonian Institution.
- Heizer, R. F. and A. B. Elsasser. 1964. Archaeology of Hum-67, the Gunther Island site in Humboldt Bay, California. *University of California Archaeological Survey Reports* 62:1-122.
- Hildebrandt and Levulett. 1997. Middle Holocene Adaptations. In Erlandson and Glassow, eds., 143-50.
- Hill, Jane. 2000. Languages on the land. In *Archaeology, Language, and History*, ed. J. Terrell, 257-82. Westport, CT: Bergin and Garvey.
- Hill, Jane and Kenneth Hill. 1986. *Speaking Mexicano: dynamics of syncretic language change in central Mexico*. Tucson, AZ: University of Arizona Press.
- Hinton, Leanne. 1991. Takic and Yuman: A study in phonological convergence. *IJAL* 57:133-57.
- Hinton, Leanne and Esther Wood. 2000. A report on George Grekoff's collection of Chimariko (and other) materials. In Buszard-Welcher and Hinton, eds., 109-14.
- Hoijer, Harry et al. 1963. Studies in the Athapaskan languages. *UCPL* 29.
- Jacobs, Melville. 1954. The areal spread of sound features in the languages north of California. *UCPL* 10, 45-56.
- Jacobsen, William. 1958. Washo and Karok: An approach to Comparative Hokan. *IJAL* 24:195-212.
- _____. 1979. Hokan inter-branch comparisons. In Campbell and Mithun, eds., 545-91.
- Joseph, Brian. 1983. *The synchrony and diachrony of the Balkan infinitive: A study in areal, general, and historical linguistics*. New York: Cambridge University Press.
- _____. 2001. Is Balkan comparative syntax possible? *Comparative syntax of Balkan languages*, ed. Maria Luisa Rivero and Angela Ralli. Oxford and New York: Oxford University Press.
- Kinkade, M. Dale. 2001. The areal question: Northwest Coast and California. Paper presented at the Association for Linguistic Typology IV, UC Santa Barbara, July 19-22, 2001.
- Kroeber, Alfred L. 1905. Basket designs of the Indians of Northwestern California. *UCPAAE* 2(4):105-64.
- _____. 1911. The languages of the coast of California north of San Francisco. *UCPAAE* 9(3):273-435.

- _____. 1920. California culture provinces. *UCPAAE* 17(2):151-69.
- _____. 1922. Elements of culture in native California. *UCPAAE* 13(8):259-328.
- _____. 1923. The history of native culture in California. *UCPAAE* 20:125-42.
- _____. 1925. *Handbook of the Indians of California*. (Bulletin of the Bureau of American Ethnology, 78.) Washington, D.C.: Smithsonian Institution.
- _____. 1936. Karok towns. *UCPAAE* 35(4):29-38.
- _____. 1953. Cultural and natural areas of Native North America. *UCPAAE* 38.
- _____. 1959. Possible Athabascan influence on Yuki. *IJAL* 25:59.
- _____. 1960. Yurok speech usages. *Culture in history: Essays in honor of Paul Radin*, ed. by Stanley Diamond, 993-9. New York: Columbia University Press.
- _____. 1962. The nature of land-holding groups in aboriginal California. *Reports of the University of California Archaeological Survey* No. 56. Berkeley, CA. 19-58.
- _____. ms. Various dates. *A.L. Kroeber Papers, Series 3: Field Notes, 1883-1960*. Archives of the Bancroft Library, University of California, Berkeley. Call number BANC FILM 2049.
- Kroeber, Alfred L., and Samuel A. Barrett. 1960. Fishing among the Indians of Northwestern California. *UCAR* 21(1):1-210.
- Kroeber, Alfred L., and Edward W. Gifford. 1949. World Renewal: A cult system of Native Northwest California. *UCAR* 13(1):1-156.
- _____. 1980. *Karok Myths*. Berkeley and Los Angeles: University of California Press.
- Labov, William. 1962. The social history of a sound change on the island of Martha's Vineyard, Massachusetts. Master's thesis, Columbia University.
- _____. 1963. The social motivation of a sound change. *Word* 19:273-309.
- _____. 1972. The linguistic consequences of being a lame. *Language in the inner city*, ed. William Labov, 255-92. Philadelphia: University of Pennsylvania Press.
- Langdon, Margaret. 1974. *Comparative Hokan-Coahuiltecan studies: A survey and appraisal*. (Janua Linguarum, Series Critica 4). The Hague: Mouton.
- _____. 1979. Some thoughts on Hokan with particular reference to Pomoan and Yuman. In Campbell and Mithun, eds., 592-649.
- Lathrap, Donald W. and Rudolph C. Troike. 1983-4. Californian historical linguistics and archaeology. *Journal of the Steward Anthropological Society* 15:99-157.
- Lippi-Green, R. 1989. Social network integration and language change in progress in an alpine rural village. *Language in society* 18:213-34.
- Loud, Llewellyn. 1918. Ethnogeography and archaeology of the Wiyot territory. *UCPAAE* 14(3):221-436.
- Macaulay, Monica. 1992. Inverse marking in Karuk: the function of the suffix -ap. *IJAL* 58:182-201.
- _____. 1993. Reduplication and the structure of the Karuk verb stem. *IJAL* 59:64-81.
- _____. 2000. Obviative marking in ergative contexts. *IJAL* 66:464-98.
- Masica, Colin. 1976. *Defining a linguistic area*. Chicago: University of Chicago Press.
- Merriam, C. Hart. Various dates. *C. Hart Merriam Papers*. Archives of the Bancroft Library, UC Berkeley.
- Michelson, Truman. 1914. Two alleged Algonquian languages of California. *AA* 16:361-7.
- _____. 1915. Rejoinder. *AA* 17:194-8.

- Mills, Elaine L. 1985. *The papers of John Peabody Harrington in the Smithsonian Institution: Guide to the Field Notes, part 2, Northern and Central California*. White Plains, NY: Kraus International Publications.
- Milroy, Lesley. 1980. *Language and social networks*. Baltimore: University Park Press.
- Moratto, Michael J. 1984. *California archaeology*. New York: Academic Press.
- Moravcsik. 1978. Language contact. *Universals of human language, vol. 1*, ed. by Joseph Greenberg, 93-122. Stanford: Stanford University Press. 93-122.
- Mühlhäusler, Peter. 1996. *Linguistic ecology: Language change and linguistic imperialism in the Pacific region*. London and New York: Routledge.
- Myers-Scotton, Carol. 1993. *Duelling languages: Grammatical structure in code-switching*. Oxford: Clarendon Press.
- Nettle. 1999. *Linguistic diversity*. Oxford and New York: Oxford University Press.
- Newman, Stanley. 1932. Notes from lectures by E. Sapir. In the archives of the Survey of California and Other Indian Languages, UC Berkeley Linguistics Department (call number Newman.002).
- Nichols, Johanna. 1971. Diminutive consonant symbolism in western North America. *Language* 47:826-48.
- . 1992. *Linguistic diversity in space and time*. Chicago: University of Chicago Press.
- Nichols, Johanna and David A. Peterson. 1996. The Amerind personal pronouns. *Language* 72:336-71.
- Nomland, Gladys A. and A.L. Kroeber. 1936. Wiyot Towns. *UCPAAE* 35:5.39-48.
- Pilling, Arthur. 1978. Yurok. In Heizer, ed., 137-54.
- Powell, John Wesley. 1966 (1891). Indian linguistic families of America north of Mexico. *American Indian Languages*, 82-218, ed. by Preston Holder. Lincoln: University of Nebraska Press.
- Powers. 1877. *Tribes of California*. Washington, D.C.: Government Printing office.
- Prince, Ellen. 1992. On syntax in discourse, in language contact situations. *Text and context: Cross-disciplinary perspectives on language study*, ed. C. Kramsch and S. McConnell-Ginet, 98-112. Boston: D.C. Heath.
- Quinby, Alysoun. 2003. *Dialectology of River Yurok: A Preliminary Exploration*. Senior Honors Thesis. University of California, Berkeley.
- Reichard, Gladys A. 1925. Wiyot grammar and texts. *UCPAAE* 22(1):1-213.
- . ms. 1922. *Gladys Reichard field notebooks on Wiyot Indians*. In the collection of the Bancroft Library, University of California, Berkeley.
- Renfrew, Colin. 1988. *Archaeology and language: The puzzle of Indo-European origins*. London: Cape.
- Rhodes, Richard and David J. Costa. 2003 *Essays in Algonquian, Catawban and Siouan linguistics in memory of Frank T. Siebert, Jr.*, ed. by Blair A. Rudes and David J. Costa.
- Rice, Keren. 1989. *A grammar of Slave*. New York and Berlin: Mouton de Gruyter.
- Robins, R.H. 1958. The Yurok language: Grammar, texts, lexicon. *UCPL* 15.
- . 1980. Grammatical hierarchy and the Yurok bipersonal verb. *Wege zur Universalienforschung: sprachwissenschaftliche Beiträge zum 60. Geburtstag von Hansjakob Seiler*, ed. Gunter Bretteschneider and Christian Lehmann, 360-364. (Tübinger Beiträge zur Linguistik No. 145.) Tübingen: Narr.

- Ross, Malcolm D. 1987. A contact-induced morphosyntactic change in the Bel languages of Papua New Guinea. In *A world of language: Papers presented to Professor S. A. Wurm on his 65th birthday*, ed. by D. C. Laycock and W. Winter, 583-601. *Pacific Linguistics* C-100. Canberra: Australian National University.
- _____. 1996. Contact-induced change and the comparative method: Cases from Papua New Guinea. *The comparative method reviewed*, ed. by Mark Durie and Malcolm Ross, 180-217. New York and Oxford: Oxford University Press.
- _____. 2001. Contact-induced change in oceanic languages in North-West Melanesia. *Areal diffusion and genetic inheritance*, ed. Alexandra Y. Aikhenvald and R.M.W. Dixon, 134-66. Oxford and New York: Oxford University Press.
- _____. 2003. Diagnosing prehistoric language contact. *Motives for language change*, ed. Raymond Hickey, 174-98. Cambridge and New York: Cambridge University Press.
- Sandfeld, Kristian. 1968 (1930). *Linguistique Balkanique: Problèmes et résultats*. Paris: Société Linguistique de Paris.
- Sankoff, Gillian. 1980. Political power and linguistic inequality in Papua New Guinea. *The social life of language* 5-27. Philadelphia: University of Pennsylvania Press.
- Sapir, Edward. 1910. Yana Texts. *UCPAAE* 9(1):1-235.
- _____. 1913. Wiyot and Yurok, Algonkin languages of California. *AA* 15:617-46.
- _____. 1915a. Algonkin languages of California: A Reply. *AA* 17:188-94.
- _____. 1915b. Epilogue. *AA* 17:198.
- _____. 1917a. The position of Yana in the Hokan Stock. *UCPAAE* 13(1):1-34.
- _____. 1917b. A note on the first person plural in Chimariko. *IJAL* 1:291-4.
- _____. 1921. *Language, an introduction to the study of speech*. Harcourt, Brace and Company: New York.
- _____. 1922. The fundamental elements of northern Yana. *UCPAAE* 13(6):214-232.
- _____. ms. 1927. Yurok fieldnotes. In the archive of the Survey of California and Other Indian Languages, University of California, Berkeley.
- Sapir, Edward and Morris Swadesh. 1960. Yana dictionary. *UCPL* 22.
- Sapir, Edward and Victor Golla. 2001. Hupa texts, with notes and lexicon. In Golla and O'Neill, eds., 20-1011.
- Sawyer, Jesse. 1991. Wappo studies, ed. Alice Sheperd, with annotations by William Elmendorf. (Survey of California and Other Indian Languages, Report 7). Berkeley, CA.: Survey of California and Other Indian Languages.
- Sawyer, Jesse and Alice Schlichter. 1984. Yuki vocabulary. *UCPL* 101.
- Sherzer, Joel. 1976. *An areal-typological study of the American Indian languages north of Mexico*. Amsterdam: North-Holland and New York: American Elsevier.
- Silva-Corvalán, Carmen. 1994. *Language contact and change: Spanish in Los Angeles*. Oxford: Clarendon.
- _____. 1995. The study of language contact: an overview of the issues. *Spanish in four continents: Studies in language contact and bilingualism*, ed. by Carmen Silva-Corvalán, 3-14. Washington, DC: Georgetown University Press.
- Silver, Shirley. 1978. Chimariko. In Heizer, ed., 205-10.
- Sorensen, A. P. 1967. Multilingualism in the Northwest Amazon. *AA* 69:670-84.
- Spott, Robert and A.L. Kroeber. 1942. *Yurok Narratives*. *UCPAAE* 35(9):143-256.
- Swadesh, Morris. 1953a. Mosan I: A problem of remote common origin. *IJAL* 19:26-44.

- _____. 1953b. Mosan II: Comparative vocabulary. *IJAL* 19:223-36.
- _____. 1953c. Salish-Wakashan lexical comparisons noted by Boas. *IJAL* 19:290-1.
- _____. 1971. *The origin and diversification of language*, ed. by Joel Sherzer.
- Teeter, Karl. ms. 1958. Wiyot word list, in the archives of the Survey of California and Other Indian Languages, UC Berkeley Linguistics Department. (call number Teeter.001).
- _____. 1959. Consonant harmony in Wiyot (with a note on Cree). *IJAL* 25:41-3.
- _____. 1964. The Wiyot language. *UCPL* 37.
- Teeter, Karl and John Nichols. 1993. *Wiyot handbook* (two volumes). Memoirs no. 10-11. Winnipeg: Algonquian and Iroquoian Linguistics.
- Thomason, Sarah G. 1997. Ma'a (Mbugu). *Contact languages: A wider perspective*, 469-87. Amsterdam: John Benjamins.
- _____. 2001. *Language contact: An introduction*. Washington, D.C.: Georgetown University Press.
- Thomason, Sarah G. and Terrence Kaufman. 1988. *Language contact, creolization and genetic linguistics*. Berkeley: University of California Press.
- Thompson, Lucy. 1916. *To the American Indian*. Eureka, California.
- Thurston, W. R. 1982. *A comparative study of Anêm and Lusi*. (Pacific Linguistics B-83). Canberra: Australian National University.
- _____. 1987. *Processes of change in the languages of north-western New Britain*. (Pacific Linguistics B-99). Canberra: Australian National University.
- _____. 1994. Renovation and innovation in the languages of north-western new Britain. In *Language contact and change in the Austronesian world*, ed. by T. Dutton and D. Tryon., 573-609.
- Tolowa Language Committee. 1989. *Tolowa (Tututni) language dictionary*. Crescent City, CA: Tolowa Language Committee.
- Trubetzkoy, Nikolai S. 1928. Proposition 16. *Acts of the 1st International Congress of Linguists*, Leiden, Germany. 17-18.
- Wallace, William J. Post-Pleistocene archaeology, 9000 to 2000 B.C. In Heizer, ed., 25-36.
- Waterman, T. T. 1920. Yurok Geography. *UCPAAE* 16(5):177-314.
- _____. and A. L. Kroeber. 1934. Yurok Marriages. *UCPAAE* 35(1):1-14.
- Weinreich, Uriel. 1974 (1953). *Languages in contact: Findings and problems*, with a preface by André Martinet. The Hague: Mouton.
- Wertheim, Suzanne. *Linguistic purism, language shift, and contact-induced change in Tatar*. Ph.D. dissertation, University of California, Berkeley.
- Whistler, Kenneth. 1979. Linguistic prehistory in the northwestern California culture area. In P. McW. Bickel, *A study of cultural resources in Redwood National Park*, 11-26. Denver: Report to the National Park Service.
- Winter, Werner. 1973. Areal linguistics: Some general considerations. *Diachronic, areal and typological linguistics*, ed. by T. Sebeok, 135-47. (Current Trends in Linguistics 11). The Hague: Mouton.
- Wood, Esther and Andrew Garrett. 2002. The semantics of Yurok Intensive infixation. *Proceedings from the fourth Workshop on American Indian Languages*. UC Santa Barbara Papers in Linguistics.