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Topics in Historical Chumash Grammar

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DISSERTATION

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## INTRODUCTION

The Chumash language family of Southern California is the subject matter of this thesis. There are six linguistically distinct groups which were recognized by the Indians themselves; these are called Ineseño (in the text I), Barbareño (B), Ventureño (V), Purisimeño (P), Obispeño (O), and Cruzeño (C). The Chumash lived in an area extending from a point on the Southern California coast just north of San Luis Obispo southwards to approximately Malibu. Their territory reached inland as far as the San Joaquin Valley. Roughly speaking, they were bounded to the north by the territory of the Salinan groups; to the east by the Yokuts groups; and to the southeast by the Uto-Aztecan groups. The names of five of the linguistic groups are derived from the names of the five Franciscan missions established within Chumash territory (Missions Santa Ynez, Santa Barbara, San Buenaventura, La Purísima, and San Luis Obispo). The name of the sixth, Cruzeño, is taken from the name of the island upon which this group lived (Santa Cruz) before being brought to the mainland in about 1824.

The purpose of this thesis is twofold. First,

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I will examine, compare, and contrast certain salient features of the Chumash languages, including phonological, morphological, lexical, and syntactic patterns. I will not give a complete description of any one language or dialect. Second, I will examine, from the point of view of Chumash, the areal relationships of this group with its Salinan, Yokuts, and Uto-Aztecan neighbors.<sup>1</sup> Not all features found in Chumash can be directly compared with one another and thus cannot necessarily be attributed to the parent language. In such cases, it is often more profitable to seek an origin in history outside of the family, and this I will attempt to do.

Before the turn of the 19th-20th centuries, the publication of Chumash material comprised almost entirely wordlists. The most lengthy and well-known of these are those compiled by Alphonse Pinart (1878) and H.W. Henshaw (1884), published by Robert F. Heizer (1952, 1955). A number of Chumash vocabularies and texts were also gathered by Father Felipe Arroyo de la Cuesta in the years 1833-36. These have never been printed. The manuscript containing them now resides in the Bancroft Library of the University of California, Berkeley.

In addition to these, there are several shorter vocabularies. However, no major grammatical study of any aspect of Chumash appeared until early in this century. At that time, A.L. Kroeber began publishing

a series of articles on Chumash in connection with his and Roland B. Dixon's work on the wide family linguistic relationships within California. The sources used by Kroeber were the early word lists supplemented by his own data collected from the occasional Chumash speaker he would find during his investigations. Kroeber's own data, however, are not extensive, and are not particularly well-recorded. His information does not allow for the type of in-depth comparison of dialects which he attempted to do, although it was sufficient to allow him to make some brilliant conjectures, many of which have been borne out by subsequent research.

During much of the same period (the early part of the present century) when Kroeber was working with Chumash, there were two other scholars also busy in the field recovering as much information as they could on the languages. These men, C. Hart Merriam and John P. Harrington, were alike in that, unlike Kroeber, they were secretive about their work and did not seem particularly eager to share information or informants and rarely published their findings. It is probably a scholarly loss to the American Indian linguistic community that Kroeber, Merriam, and Harrington did not collaborate more; we are at least fortunate to have the results of their individual efforts in the form of field notes.

Merriam's Chumash data, while not extensive, give

us information on dialects for which almost no other data exist (namely Alliklik and Emigdiano). The notes are transcribed in a non-standard phonetic code of Merriam's own devising, based roughly upon English spelling or upon the Webster system of transliteration. It is often difficult to determine the precise value of a grapheme when applied to an American Indian language. Merriam appears to have had a reasonably good ear for the sounds he encountered in Chumash. He heard glottalization, though not consistently, and attempted to indicate it. Where we can determine a phonetic value for his symbols, his recordings are valuable records. The Merriam notes are currently in the custody of the Department of Anthropology, University of California, Berkeley.

The source we are most concerned with here, though, are the field notes of John P. Harrington. These records, collected over a period of some fifty years of field work (not continuous) on Chumash, constitute the best source we are ever likely to possess for most dialects. Since so much has been written already on this particular collection, which resides in the National Anthropological Archives of the Smithsonian Institution in Washington D.C., it will suffice to refer the reader to the catalogue of the collection by Jane Walsh (1976) and Catherine Callaghan's article on Harrington (1975).

The final major source of primary data for the

Chumash languages are the field notes of Madison S. Beeler on Barbareño. Beeler began working with this dialect in 1954, and continued doing so until 1965, when the last known speaker of any Chumash language, Mrs. Mary Yee, died.

As direct sources of data for this thesis, I use the following:

Ineseño. The most complete description of any Chumash language which is available at this time is Richard Applegate's treatment of Ineseño (1972a). This and the accompanying lexicon are based upon the Harrington notes. The grammar and lexicon, as well as notes from conversations with Dr. Applegate, are my sources for Ineseño data.

Barbareño. For this dialect I have used Madison Beeler's sketch of Barbareño grammar (1976) as well as notes from conversations with Dr. Beeler. He has also kindly allowed me access to his file boxes which contain much additional information not in the sketch, and has aided in supplying specific information relevant to the text of the thesis.

Ventureño. The published (Harrington 1974) and unpublished Harrington notes and the unpublished analyses of these notes by Richard Applegate were my main sources for Ventureño data.

Obispeño, Purisimeño, and Cruzeño. All data used in this thesis, with exceptions as noted in the text, are



from the Harrington materials. For Obispeño and Purisimeño, I have compiled grammatical sketches. For Cruzeño, Beeler and I have written a grammatical sketch ("Island Chumash", unpublished).

For all Chumash dialects, primary sources recorded prior to those of Harrington and Beeler are available. But in quality and quantity, these two surpass all earlier recordings and I have not used the latter in this thesis except in those rare instances where they can amplify or clarify the information supplied by the major sources.

Finally, it is interesting if tragic to add a few notes on the social history of the Chumash, if only to set into perspective the value of having as much information about these languages and the people who spoke them as we do have. Sherburne F. Cook, in The Conflict Between the California Indian and White Civilization gives the population of the Chumash as a whole as 8000 individuals in 1770 (1976, p. 189). This figure almost certainly represents a conservative estimate (Beeler and Haas, personal communication) for the Santa Barbara coast was capable of supporting a far larger population. However, using the population of 8000 as a guide, Cook records the following decline.

Date	Population
1832	2471
1842	1656
1852	1000; 1107
1865	659
1880	40; 336
1920	74

(The figures are from Cook 1976, p. 236)

These figures vary slightly in some years due to the fact that they are taken from different contemporary sources or are deduced by different methods of estimation. What is important and clear is the rapid decline of the population from aboriginal times to the end of the mission period and on into the 20th century. Regarding one of the 1880 figures (actually 1884), J.W. Powell wrote in 1891:

In 1884 Mr. Henshaw visited the several counties formerly inhabited by the populous tribes of this family and discovered that about forty men, women, and children survived. The adults still speak their old language when conversing with each other, though on other occasions they use Spanish. The largest settlement is at

San Buenaventura, where perhaps 20 individuals live near the outskirts of the town.

(Powell 1891, p. 144 in the University of Nebraska reprint.)

The higher figures for 1880 (336) and 1920 (74) estimated by Cook on the basis of birth and death rates (1976, p. 242, n. 46) do not necessarily reflect the number of fluent Chumash speakers still living at the time. Nor do they reflect the distribution of speakers within dialects. By 1920, the last year for which Cook gives figures, it is certain that there were no speakers of Cruzeño or Obispeño. The last known Cruzeño speaker, Fernando Librado, had died in 1915 at the age of 111 years. The last known Obispeño speaker, Mrs. Rosario Cooper of Arroyo Grande, had died in 1916 at the age of about 70 years. All the other Chumash speakers still living at the time spoke Barbareño, Ineseño, Ventureño, or Purisimeño. In the case of Purisimeño, there seem to have been no individuals whose main language was this one, only Ineseño speakers who also knew some Purisimeño.

With a history of such rapid decimation, especially of the smaller groups such as Obispeño and Purisimeño, we are fortunate to have the information we do. I hope that in this thesis I can offer a picture of a

language family which will reflect the diversity of this once-vital group in prehistoric times.

CORRESPONDENCES AND RECONSTRUCTIONS I:  
The Proto-Chumash Phonological Inventory

Since there are at this time no living speakers of any Chumash dialects, it is impossible for a field worker to find out at first hand any information on the relative closeness or distance of the dialects from one another. Occasional notes in the Harrington materials give us glimpses of what speakers thought about these things, but nothing complete or systematic emerges. The comments we find in Harrington center on the relationships between Ineseño, Barbareño, Ventureño, and Purisimeño, and indicate mutual intelligibility as regards these idioms, although speakers recognized distinct differences. We do not have such information for Obispeño or Cruzeño.

There is, however, sufficient data in the several dialects to allow us to apply the comparative method to Chumash to determine the configuration of some of the features of the proto-language and to allow us to make a genetic subgrouping of the dialects.

Chumash has been characterized as a language

family with either very conservative consonantal correspondences or with no recognizable correspondences at all. It is apparent from an examination of an extensive list of cognates that this view is not entirely true. While it is evident that many of the correspondences are conservative, there are a few major shifts which show change in consonantal quality. It is these major shifts which give each of the dialect subdivisions its individual character.

The following charts show the consonantal and vocalic inventories of the six major Chumash dialects.

### Ineseño

p	t	c	č	k	q	'
p'	t'	c'	č'	k'	q'	
p <sup>h</sup>	t <sup>h</sup>	c <sup>h</sup>	č <sup>h</sup>	k <sup>h</sup>	q <sup>h</sup>	
		s	š		x	h
		s'	š'		x'	
		s <sup>h</sup>	š <sup>h</sup>			
m	w	n	l	y		
m'	w'	n'	l'	y'		

### Barbareño

The consonant inventory for Barbareño is identical

with that of Ineseño, except that /š'/ has not been found in the dialect, according to Beeler (1976).

### Ventureño

The consonant inventory for Ventureño is identical with that of Ineseño.

### Purisimeño

The consonant inventory for Purisimeño is similar to that of Ineseño, with the following differences: /p<sup>h</sup>, t<sup>h</sup>, c<sup>h</sup>, č<sup>h</sup>, x'/ have not been found in the corpus. /q'/ is extremely rare. These differences may be due to the small size of the corpus (fewer data than for any other Chumash dialect) and there is no reason to suspect that Purisimeño does not have these phonemes.

### Obispeño

p	t	t <sup>y</sup>	c	č	q	'
p'	t'	t <sup>y</sup> '	c'	č'	q'	
p <sup>h</sup>	t <sup>h</sup>	t <sup>y</sup> h	c <sup>h</sup>	č <sup>h</sup>	q <sup>h</sup>	

				s	š
				s'	š'
				s <sup>h</sup>	š <sup>h</sup>
m	w	n	l	y	
m'	w'	n'	l'	y'	
				ɬ	
				ɬ'	

### Cruzeño

The consonant inventory is identical with that of Barbareño; /š'/ has not been found.

For the proto-Chumash phonemic inventory, I will not reconstruct aspirated segments. This is not meant to imply that proto-Chumash did not have such segments, simply that they are best treated as not being of primary origin. Their existence can be considered to have arisen from the working of some phonological processes such as gemination or dissimilation of adjacent consonants or the coalescence of a consonant plus /h/.



## Gemination

I s + sin'ay > s<sup>h</sup>inay 'he puts it away'

B p + pax > p<sup>h</sup>ax 'your skin'

## Dissimilation

O qik<sup>h</sup>smu' 'existence, life'

C -k<sup>h</sup>toton 'low'

O k<sup>h</sup>inip<sup>h</sup>nema ( < k<sup>h</sup>in<sup>h</sup>- + p + nema ) 'don't be late!'

## C + h

I k<sup>h</sup>awa' ( < k + hawa' ) 'my maternal aunt'

Aspiration is phonemic, but at the morphophonemic level, the specification of aspirated segments is unnecessary. Since all dialects synchronically attested show the above rules, it can be assumed that the proto-language operated similarly. Proto-Chumash had aspirated consonants, but they originated in the same ways as they do in the daughter languages.

In the following reconstructions, I give sets containing data from at least one dialect out of Ineseño, Barbareño, Ventureño, and Purisimeño; data from Obispeño; and data from Cruzeño when available. Since sets containing forms from Obispeño, Cruzeño, and any one of the other dialects are relatively rare, several sets may have to be considered to best

justify the form of any given segment's reconstruction. At least one set is given to support each reconstructed phoneme; additional sets which support the reconstruction are listed by gloss and may be found in the chapter on "Cognate Sets".

### Labials

\*p

'hand'

I pu

B pu

V pu

P pu 'arm'

O pu

C -pu'u in wačpu'u 'finger'

Other sets: gophersnake, knee, louse, mosquito, nerve, nest, now, red, roadrunner, salt, save (rescue), cost, stick to, wood, ascend, ball, blow, cheek, chia, cooked, flower, follow

\*p'

'bathe, to'

I k ep'  
 B k ep'  
 V ke'ep  
 O t<sup>y</sup>e' ~ 'e'

Other sets: No other sets have been found supporting  
 the reconstruction of this phoneme.

\*m

'jackrabbit'  
 I ma'  
 B ma'  
 V ma 'hare, rabbit sp.'  
 O (t)ma' 'rabbit'  
 C ma

Other sets: gull, knee, mother-in-law, new, seed,  
 straight, two, advise, arrive, arroyo,  
 back, bat, meat/body, cold, drink, far,  
 foot

\*m'

'Jimson weed'  
 I momoy  
 B mom'oy

V momoy  
 O moyoq  
 C mom'oy

Other sets: knee, mountain lion, squirrel (?)

\*w

'cut'  
 I 'iwawan  
 B 'iwawan  
 V 'iwi  
 O 'iwi

'arrow'  
 V kalawa  
 O c lewe  
 C 'ewe 'needle'

Other sets: boil, chest, eat, eyes (having to do with),  
 fly, hang, mosquito, oak sp., smoke,  
 swordfish

\*w'

'tongue'  
 I 'elew  
 B 'el'ew

V 'elew'

O 'e±hew(')

Other sets: cost, boil (?)

### Dentals

\*t

'name'

I t±

B ti

V t±

P t±

O ti

C te

Other sets: grasshopper, hear, look, name, nest,  
oak sp., cost, salt, smoke, steps, tail,  
tears, ant, armpit, back, blow, break,  
breast, comb, come, concerned, ear, eye,  
foot, full (from eating)

\*t'

'squirrel'

I 'emet

P 'em'et'  
 O teme'

Other sets: No other sets have been found supporting  
 the reconstruction of this phoneme.

\*n

'neck'  
 I ni'  
 B ni'  
 V (aqniw ? related)  
 P ni'  
 O ni'  
 C ne 'nape of neck'

Other sets: tears, ascend, ashamed, ask, begin, bring,  
 dirty, fire, fly

\*n'

'swordfish'  
 I 'eleyewun  
 B 'el yew'un  
 V 'el yewun'  
 O 'eleyewu(')

Other sets: meat/body, seed, lie down (cf. /\*l'//)

Dental and Palatal Spirants and Affricates

Because of the operation of sibilant harmony in Chumash (see Beeler 1970, Harrington 1974), the reconstruction of dental and palatal spirants and affricates is not straightforward, as the correspondences between dialects are not regular. The immediate solution to this, though by no means the one which is to be preferred ultimately, is the reconstruction of a single abstract segment /\*S/ or /\*C/ where an exact specification cannot be made about whether the segment should be reconstructed as a palatal or a dental.

\*S

'gophersnake'

I pšoš

B pšoš

V pšoš

O (c)psoso

C pšoš, pšo'oš

Other sets: ant, ashamed, ashes, ask, bone, breathe,  
 carry, comb, cook, day, die, earth,  
 fingernail, hair, heel, hole, louse, moist,  
 mother-in-law, tooth, two, vomit, wrinkled,  
 yawn

\*S'

No sets have been found to demonstrate the reconstruction of this phoneme.

\*C, \*C'

'clitoris'

I ic'ele

V (\*al)ic'ele

O č<sup>h</sup>ele

It is not clear whether this set justifies the reconstruction of /\*C/ or /\*C'/. In any case, there are very few sets which illustrate this correspondence. Several of those sets, however, have another similarity: the affricate in I,B,V,P is preceded by the vowel i-; cf. 'younger sibling' I ic'is, B (k)-ič'ič, O c'isi' ~ č'isi'.

### Laterals

There are only two phonemic laterals in proto-Chumash, /\*l/ and /\*l'/. Voiceless variants occur in all dialects, notably in word-final position, at morpheme



boundaries, and in absolute initial position. Obispeño has a phonemic /ɬ/, though it is extremely rare and further analysis may show that it too is allophonic in all cases. In Obispeño, it also arises as a result of the contact of /l/ and /h/.

\*1

'armpit'

I toq'olo

B toq'olo

V tok'olol (cf. toq'ololi 'put, have under the arm')

O tiq'ololo

'tongue'

see under /\*w\*/

'drink'

I 'aqmil

B 'aqmil

V 'aqmil

O 'aqmilha 'be thirsty'

C 'aqmil 'drink, be thirsty'

Other sets: hole, pick up/lift/raise, mouse, swordfish,  
already, ant, bat, breathe, bring, chia,  
deep

\*l'

'necklace'

I 'el'

B 'el'

V 'el'

O tel'e

Other sets: arroyo, lie down (cf. /\*n'/), liver, urinate

Glottal segments

\*glottal stop (\*)

'ear'

I tu'

B tu'

V tu

O tu'

C tu, tu'u

Other sets: arrow, ant, back, begin, cheek, foot,  
 full (from eating), get up, homosexual,  
 moist, mosquito, neck, nest, oak sp.,  
 one-eyed, pet, prickly pear, rabbit, road-  
 runner, smoke, water

\*h

'rain'

I tuhuy

B tuhuy

V tuhuy

O tu

C tuhuy

'hello (greeting)'

I hak u

B hak u

V hak u

P hak u

O hat<sup>y</sup>u

Other sets: No other sets have been found supporting  
the reconstruction of this phoneme.

### Palatal Semivowel

\*y

'yellowjacket'

B 'ɨy

V 'ɨy

O tɨyɨ'

'Jimson weed'

I momoy  
 B mom'oy  
 V momoy  
 O moyoq  
 C mom'oy

Other sets: all, ant, arrow, come, dirty, fingernail,  
 go, full, hang, steps, straight, swordfish

\*y'

'flower'  
 I pey'  
 B spey'  
 V (c,s)pe'ey  
 P spe  
 O (č)pe

Other sets: moon, follow, stick to

### Velar Spirant

One of the most problematic alternations in Chumash is that of /q/ and /x/. (See Applegate 1972a,

pp. 55-57; Harrington 1974, pp. 8-9.) It affects all Chumash dialects, both within the individual idiom and between different ones. There is no regularity in the correspondences between dialects any more than there is a way of predicting its occurrence within dialects. It represents some kind of consonantal ablaut which goes back as far as proto-Chumash; there it certainly had some predictable functions. At this time it is not possible to recover the precise nature of those functions, but there is not reason to reconstruct two proto-phonemes /\*x/ and /\*q/. I reconstruct only /\*q/ and acknowledge that there is an alternation between /q/ and /x/.

\*q<sub>1</sub>

'skunk'

I taxama

R taxama

V taxama

Q tqema

C txama!

'nettles'

I xwapš

B xwapš

V xwapš

O tqmapsì

C qwapš

Other sets: stone, urinate, warm self, bear, ant,  
break, cost, day, make/do, drink,  
eyes (having to do with), grasshopper,  
hear, low tide, one-eyed, overcast, pet

\*q

'tail'

I tel eq'

B tel'eq

V tel eq

P telex

O telhe'

Other sets: armpit, snail

### Palatals and Velars

There are no palatal or velar nasal phonemes in Chumash. There are two stop consonants in this articulatory position in each of the dialects. In Barbareño, Ineseño, Ventureño, Purisimeño, and

Cruzeño, we find /k/ and /q/ (see above for discussion of /q/). In Obispeño, we find /tʲ/ and /q/ with [kš] and [k] as allophonic variants of the former and [k] as an allophonic variant of the latter. The data available, however, do not allow an unambiguous specification of the correspondence of Obispeño /tʲ/ and /q/ to Ineseño, Barbareño, Ventureño, Purisimeño, and Cruzeño /k/ and /q/, respectively. This is because in Obispeño there has been a phonemic split (fully discussed below). For proto-Chumash we can reconstruct /\*k/ and /\*q/ (above). In certain cases in Cruzeño,

/\*k/ became /č/, but this is a secondary development.  
 We can consider that proto-Chumash had /\*k/ in all  
 cases.

\*k

'two'

I 'išk om'

B 'išk om'

V 'išk om'

P 'išk om'

O 'est<sup>y</sup>u'

C 'iščom

'breathe'

I k alaš

B k alaš

O qst<sup>y</sup>ełha

Other sets: bat, bathe, breast, bring, carry, chest,  
 comb, eye/face, far, hello, look,  
 mountain lion, mouth, now, oak sp.,  
 open, person, rabbit

\*k'

'tears'

I tɪnɪk'



B tin'ik  
 V t̃inik  
 O tiñi'

Any glottalized stop in final position in Obispeño frequently became merely a glottal stop.

Other sets: break, woodpecker, wrinkled

### Vowels

Vowels present a particularly difficult problem in the reconstruction of proto-Chumash. This is so particularly with regard to the high central vowel /ĩ/. Many cognate sets show this vowel in all dialects, so that technically it is possible to reconstruct it in the proto-language. Whether we do this, or assume that it was borrowed later into all the dialects from an outside source, is an unresolved issue. If we decide the latter, we will never know what the original vowels were in a given form. If we choose the former, and reconstruct /\*ĩ/, we must deal with the fact that this phoneme does not pattern well with other vowels in terms of vowel harmony (see Applegate 1971).

Another feature of Chumash vowels is a kind of ablaut. Vowels alternate between front and back position: thus, /e/ ~ /o/ and /i/ ~ /u/. Concerning these alternations in Chumash, little is known. The only discussion of them to date is in Applegate (1972a), where he says (in regard to Ineseño):

There are a few marginal cases suggestive of vowel ablaut in stems and prefixes. Ablaut in stems is usually between the low vowels /e/ and /o/, while in prefixes it is between the high vowels /i/ and /u/. Such examples are far from productive, but do not seem entirely accidental. They may represent the synchronic relics of a phonological process once more widespread. (p. 57)

Applegate's remarks can be taken to apply more broadly to Chumash dialects, including Obispeño. However, we also find these alternations showing up in comparative sets, where one dialect has /i/ and another /u/. I feel confident in comparing these, but not in how to specify the underlying vowel. If it is true, as seems likely, that /e/ ~ /o/ is a stem alternation, and /i/ ~ /u/ is a prefix alternation, this could be a way of deciding, in proto-Chumash forms which appear polymorphemic, what constitutes the root and what may be old, no longer synchronically analyzable prefixes. In the section on "Cognate Sets", these alternations are reconstructed

as alternating vowels: \*i/u, \*e/o.

### Conclusion

The phoneme inventory of proto-Chumash was not greatly unlike that of several of the daughter languages and included the following segments:

p	t	k	q	'
p'	t'	k'	q'	
	s	(c)		h
	(s')	c'		
m	n			
m'	n'			
w		l	y	
w'		l'	y'	
i	(i̥)	u		
e	a	o		

/\*q/ alternated with [\*x]

Stops, affricates, and spirants had aspirated versions.

## CORRESPONDENCES AND RECONSTRUCTIONS II:

## The Subgrouping of the Dialects

Only two previous published attempts to give an internal classification of the Chumash dialects exist. The first is a statement contained in the Powell survey.

Dialects of this language were spoken at the Missions of San Buenaventura, Santa Barbara, Santa Inez, Purísima, and San Luis Obispo. Kindred dialects were spoken also upon the Islands of Santa Rosa and Santa Cruz, and also, probably upon such other of the Santa Barbara Islands as were formerly permanently inhabited.

These dialects collectively form a remarkably homogeneous family, all of them, with the exception of the San Luis Obispo, being closely related and containing very many words in common.

(Powell 1891, p. 143 in University of Nebraska reprint)

Powell's statement does nothing more than declare that the languages spoken at the missions mentioned and on the islands were all members of a

single family; it does, however, single out Obispeño as being a particularly divergent dialect.

The second and more detailed subgrouping in the one proposed by Kroeber (1910):

The known Chumash dialects fall clearly into three divisions. One group comprises the district of San Luis Obispo. Another embraces the islands, so far as these were Chumash and not Shoshonean. All the remaining territory within the limits of the family was included in what may be called the principal or central group.

(Kroeber 1910, p. 264)

These statements, especially Kroeber's, implicitly raise two questions. First, is a division into either two or three groups along the lines suggested by Powell and Kroeber a valid subgrouping? Kroeber demonstrated no systematic phonological or morphological correspondences, nor did he delve deeply into any other aspects of the dialects. This was, it is certain, only because he had at his disposal such limited resources. This leads us to a second question, namely, is any one of the three divisions posited by Kroeber closer to any other one of them?

Early observers of Chumash recognized, as we have seen, that even the most poorly recorded or incomplete data pointed to a two-fold or three-fold division in

the family. We can say that such groupings were done mainly on the basis of "lexical inspection". In terms of this criterion alone, borrowings from other languages would constitute primary evidence for genetic relationship. But such lexical inspection does at least imply an intuitive awareness of two facts: one, that the observers were aware of non-superficial differences between dialects; and two (and more importantly), that the observers discerned similarities despite the differences. That no one bothered to catalogue either the similarities or differences systematically is characteristic of both the purposes of such observers (for instance Powell) and their methods (Kroeber).

In the preceding chapter I showed that Chumash consonantal correspondences are mostly conservative. Our broad picture of proto-Chumash consonants makes it appear that they are in general much like what we find in the daughter languages, and that many of the major differences between dialects are due to consonant loss rather than change. There are differences, however, which are a result of consonant change, and we can demonstrate that these are systematic and predictable.

The main and best evidence we have for the divergences of the dialects is of a phonological nature. The major phonological difference between

dialects in in the series of stop consonants.

I,B,V,P	p	t	k	q	'
C	p	t	k(č)	q	'
O	p	t	t <sup>y</sup>	q~k	'

(This is done according to the correspondences given in the preceding chapter. C /k(č)/ represents a correspondences to I,B,V,P /k/; O shows no phonemic distinction between [k] and [q].)

This distribution permits the reconstruction of an identical series of stops for the proto-form of I,B,V, and P; they can be grouped together on this basis as Central Chumash. Proto-Central Chumash stops were \*/p, t, k, q, '/. We can also assume for Cruzeño a series of stops identical to these at an earlier stage: proto-Island Chumash \*/p, t, k, q, '/, but where, in certain palatal environments, \*/k/ became /č/. For example, Central Chumash 'iškom', Island Chumash 'iščom. (Cf. O 'est<sup>y</sup>u' 'two'). Though Island Chumash /č/ sometimes corresponds to Obispeño /t<sup>y</sup>/, such is not always the case; cf. I, B mīk, V mīkī'ī, mī'īk 'far', O mīt<sup>y</sup>ī, but C mīkīč. The change of proto-Chumash \*/k/ to C /č/ is an independent, late development in Cruzeño, most probably taking place

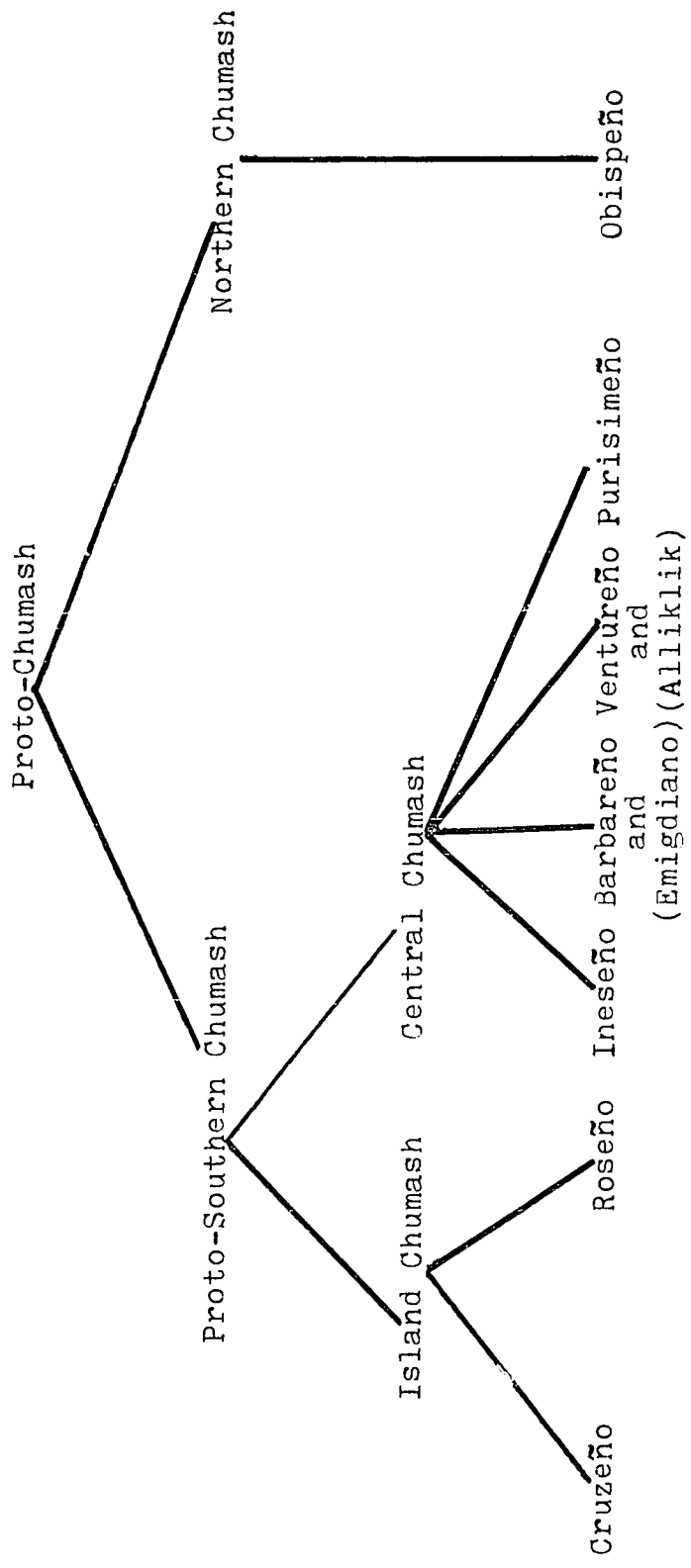
after the movement of some Chumash speakers from the mainland to the islands. These two groups, represented on the one hand by Ineseño, Barbareño, Ventureño, and Purisimeño, and on the other by Cruzeño, are very similar and can be said to constitute one major family division. This I will call Southern Chumash.

The third group, however, still stands apart. The phonemic split whereby proto-Chumash /\*k/ became Obispeño /tʲ/ or /k ~ q/ gave rise to one of the most striking phonological characteristics of this dialect. It stands quite apart from its southern sisters, and the differences are deep. The development of proto-Chumash /\*k/ in Obispeño is of a greater time depth and more widespread in the lexicon than is the Cruzeño development of proto-Southern Chumash (and proto-Chumash) /\*k/ into /č/.

The six major dialects of Chumash can on phonological grounds, be seen to stand in the relationship to one another expressed by the diagram on the next page.

Criteria for further subgrouping among the Central Chumash languages remain to be found. Both Beeler and Applegate (personal communication) agree that Barbareño and Ineseño appear closer to one another than either is to Purisimeño or Ventureño. Purisimeño has undergone some changes on its own, for





example devoicing and dropping of final resonants (reminiscent of Obispeño, with which it was in geographical contact); and Ventureño shows the loss of many glottalizations of consonants. Barbareño itself shows some special developments in glottalized consonants; it regularly moves a glottalization back one consonant in a word from where it occurs in other dialects: I t̥nik' 'tears', B tin'ik, O tini'.

From here on, the divisions of Chumash will be known by the following labels: Ineseño, Barbareño, Ventureño, and Purisimeño constitute Central Chumash. Cruzeño constitutes Island Chumash, along with the very poorly-attested Roseño. These two groups, Central and Island, together constitute Southern Chumash. Obispeño is the sole known member of what I will call Northern Chumash. If other dialects once existed, they were not recorded and are lost to us.

As a sidelight, the assumption that proto-Chumash \*/k/ giving /tʰ/ and /k ~ q/ in Northern Chumash is a primary split, while the development of \*/k/ to Cruzeño /č/ is a later change helps to explain an anomalous fact of the data of earlier recordings of the Island dialects. The other island idiom, Roseño (of Santa Rosa Island) exhibits /k/ in certain environments where Cruzeño has /č/; e.g. C teč 'eye', R tek 'eye'. If these dialects are as close as all other evidence

would indicate, and if this proto-Chumash /\*k/ to /č/ development were primary, we would not expect this correspondence. The better assumption is, as posited above, that it was a late development in Island phonology. At the time of contact with Europeans, it had not spread fully into the Roseño lexicon. It was perhaps not even complete in Cruzeño at the time that recordings were made and the languages died so shortly afterward that we will never know the full details.

The preceding discussion gives the major phonological evidence upon which we can base a genetic subgrouping of the Chumash dialects. There is other evidence of the primary split between Northern and Southern Chumash, namely the correspondence of /m/ and /w/. In some sets, there is no difficulty in deciding which is to be reconstructed. For example:

'eat'

I 'uw

B 'uw

V 'uw

P 'u'u

O 'u', 'uw

C 'uwma 'food'

\*uw

'arrive'

I kum  
 B kumi  
 O tut<sup>y</sup>im<sup>h</sup>hi  
 C čum

\*ki/um

But in some cases, there is not such a clearcut correspondence between subdivisions. In most cases, Island forms pattern with Central forms, as the following examples show.

'make, do'

I,B,V 'eqwel  
 C 'aqwel  
 O 'aqmanu

'fingernails'

I sixway'  
 B sixway  
 C siqway  
 O č<sup>h</sup>iqama

'nettles'

I,B,V xwapš

č qwapš

0 (t)qmapsi

These forms show Northern Chumash to be in contrast to Southern Chumash regularly. How the segment is to be reconstructed is not clear. Its distribution, however, offers further evidence of the close alignment of the Central and Island dialects, and the more distant relationship of Northern Chumash.

## CORRESPONDENCES AND RECONSTRUCTIONS III:

## Morphological Correspondences

All Chumash dialects which we know about at all had particles. They are such a common feature of these languages that even in a short word list of only about sixty items for an Interior Chumash dialect we find examples of them (see Beeler and Klar 1977). Particles as a class are deictic or demonstrative in Chumash sentences. The variety of the particles, which have usually been written as proclitic items attached to the nouns to which they refer, is unusual given the otherwise closely knit structure of the family. A particle of a given phonetic shape in one dialect may not occur at all in any other dialect. If it does occur, its meaning usually does not correspond in the two dialects. For instance, C pa- 'definite article'; O pa- 'that one, yonder'. At this time we cannot certainly say how these particles came to be, what all their functions were in proto-Chumash, or what the developmental sequence may have been in all cases between proto-language and daughter languages. In this section, however, I will examine one piece of the

system and suggest some of the implications it may have for the family as a whole. That portion will include primarily the particles used to mark possessive relationships and those used to form definite noun phrases. These two categories are probably closely related historically.

A partial listing of Chumash particles includes the following:

Ineseño	he'	'this'
	heči', heča'	'this'
	kwek'i, hek'i	'that, not far away'
	kolo', lo'	'that, far away'
	k'a	'this, that, the'
	ma/ha	'definite article, the'
	mi-	'locative'
Barbareño	-l-	'definite article, the'
	he'	'here, this (one) (near the speaker)'
	ho'	'there, that (one)(removed from the speaker)'
	hu	'remote in time or space, not visible to the speaker'
	(h)i	'disjunctive'
	kam, ankela	'that one'

Ventureño	si-	'definite article, the'
Purisimeño	ka-	'definite article, the'
Obispeño	hi-	'this (hiksa 'this one')
	pa-	'that' (paksa 'that one, there')
	ya-	'definite article, the'
	ti-/tu-	'locative'
	ni-/nu-	'locative'
	xa-, a-	'interrogative'
	mi-	'first person possessive'
Cruzeño	pa-	'definite article, the'
	si-	'second person possessive'
	mi-	'first person possessive'

Included among the particles listed above are the morphological devices whereby the various languages form the definite article construction. A definite article in one form or another is a feature of all known Chumash dialects. To summarize, the forms of the definite article are as follow:

I	ma-/ha-
B	-l-
V	si-



P	ka-
O	ya-
C	pa-
(Roseño	ka-)

In Central and Island dialects, the particle is simply added to the noun to form the definite noun; nothing intervenes between them.

Ineseño	qaq' 'raven'
	maqaq' 'the raven'
	qsi 'sun'
	maqsi 'the sun'
Purisimeño	aho 'water' (from -o)
	kaho 'the water'
Cruzeño	tanim 'sun'
	ptanim 'the sun' (from pa-tanim)

In Northern Chumash, the formation of definite noun phrases is not so simple. The definite particle ya- precedes the noun, as in other dialects, but is obligatorily followed by a marker of the third person. This process is identical to the manner in which the third person possessive construction ('his', 'her', 'its')

is formed, and the distinction is often clear only in context.

Obispeño	ya-k-lmon'o	'the man'
	ya-k-takaka	'the quail'
	ya-t-powo'	'the stomach'
	ya-t-qmapsì	'the nettles'

(In the above examples, the alternation between -k- and -t- is based upon dissimilation. -t- is the usual form of the morpheme; -k- is used before dental consonants.)

The only cases where a third person marker does not appear between the definite particle and the noun is in borrowed words:

Obispeño	ya-kawayu	'the horse'
		(Spanish <u>caballo</u> )
	ya-milikanu	'the American'
		(Spanish <u>Americano</u> )

Nouns are possessed in Central Chumash usually by the simple prefixation of a person and number marker:

Ineseño	tete'	'mother'
	k-tete'	'my mother'
	pìl	'pitch'
	s-pìl	'its (a pine tree's) pitch'

In Central Chumash, these person and number markers are identical with those used to inflect verbs, except that there are no impersonal forms.<sup>1</sup> The morphemes are:

S1	k-
S2	p-
S3	s-
D1	k-iš-
D2	p-iš-
D3	s-iš-
P1	k-iy-
P2	p-iy-
P3	s-iy-

But in nearly all Central Chumash languages, the definite article or another particle may optionally precede the nominal complex.

Ineseño	skɪnɪt' 'rope'
	akskɪnɪt' (from ha-k-skɪnɪt')
	'my rope'
Barbareño	tel'eq 'tail'
	hos'tel'eq 'his tail'
	tɪq 'face'
	hos'iytɪq 'their faces'
	'ap 'house'
	hos'ap 'his house'



'awa 'house'  
 pmas'awa 'our (3 or more) house'  
 'ič 'mouth'  
 pap'ič 'your mouth'

The following chart shows, for all three Chumash divisions, the formatives used with possessive nouns.

	Central	Northern	Island
S1	k-	m-, mi-	č-, mi-
S2	p-	p-	p-, si-
S3	s-	t-, k-	c-
D1	k-iš-	k <sup>h</sup> -si-	k-iš-
D2	p-iš-	p <sup>h</sup> -si-	p-iš-
D3	s-iš-	t <sup>h</sup> -si- (c <sup>h</sup> i-)	s-iš-
P1	k-iy-	k-'i-	k-i-, mas-
P2	p-iy-	p-'i-	p-i-
P3	s-iy-	c-'i-/č-'i-	s-i-

The forms in Island Chumash for the first and second person singular (and the first plural) and in Northern Chumash for the first person singular are what particularly concern us here. In these dialects, the categories of things which had alternate ways of forming possessives were not arbitrary, but included those

categories which in Chumash are generally considered to have been inalienably possessed. These include body parts and kinship terms mainly, but in Obispeño, were extended to include certain other objects as well. Thus, alternating with constructions of the type given above for Obispeño and Cruzeño, we find the following:

Obispeño	'ełhe' 'tongue'
	mi'ełhe' 'my tongue'
	mišina 'cat'
	mimišina 'my cat'
	'axa 'bow'
	mi'axa 'my bow'
Cruzeño	q̣i 'father'
	mičq̣i (alongside pačq̣i) 'my father'
	lo 'mother'
	mičlo 'my mother'
	ṃiti 'older sister'
	mičṃiti 'my older sister'
	tumumu 'good friend, companion'
	mičtumumu 'my good friend, companion'
	woyo 'grandfather'
	sipwoyo 'your grandfather'

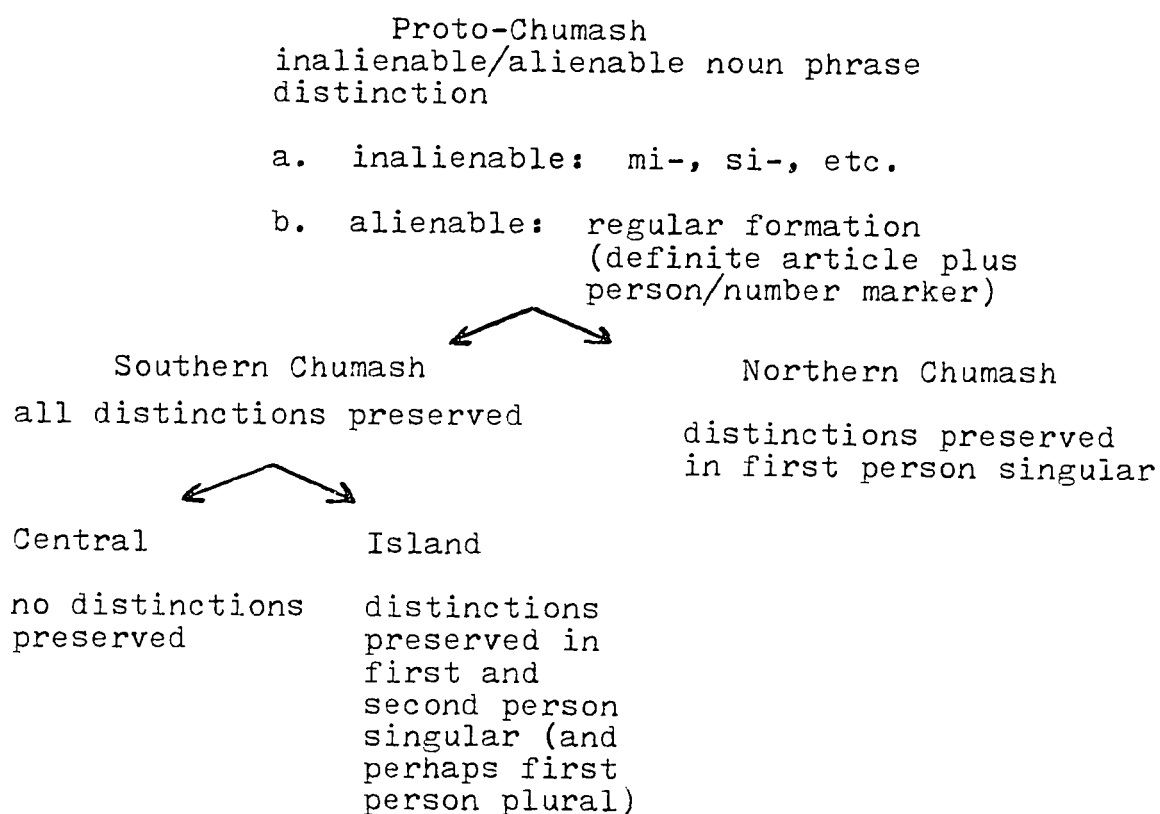
lo 'mother'

siplo 'your mother'

In Island Chumash, as can be seen above, those forms which use mi- or si- in the construction of the possessive also contain either -č- (first person) or -p- (second person). mi- or si- alone would be unambiguous; thus these forms are doubly marked for person and number. In Northern Chumash, there is no such double marking.

To summarize, the foregoing comparison shows that in Island Chumash, there was a distinction in the first and second persons between inalienable and alienable noun possession. In Northern Chumash, the same distinction was maintained, but only in the first person singular. No such distinctions are maintained at all in Central Chumash. In Northern Chumash, the formation of possessed nouns is identical to the formation of definite noun phrases, in that the formula for both is definite article ya- plus person/number marker plus noun. In Island Chumash, this is the formula for possessed noun phrases, but not for definite article constructions; the definite article is added directly to the noun stem. In Central Chumash the use of a particle is optional in possessed noun phrases; the definite article, as in Island Chumash, is added directly to noun stems.

The facts as we have them from the synchronically-attested dialects argue for a proto-Chumash system of particles which distinguished formally between alienable and inalienable nouns, at least in the first and second person forms. The following chart summarizes the changes.



There is an apparent progression in the manner in which the distinctions were lost. Island preserves them in the first and second persons, Northern in the first only, and Central not at all. No dialect preserves



them only in the second person. The items which are closest to an individual are those which he himself possesses ('my'). Second closest are those which a correspondent possesses ('your'). Most distant are those possessed by a third person ('his', 'her', 'its'). The loss of distinctions in Chumash between inflections for alienable and inalienable forms tended to proceed in a direction which preserved them most often in the first person, less in the second, and not at all in the third (if they ever existed there, for which we have no evidence).

Finally, it is not clear whether the formula in proto-Chumash for possession of inalienable objects was more like the Obispeño (mi- plus noun) or the Cruzeño (mi- or si- plus person/number marker plus noun).

At the same time as these changes in particle usage were taking place, the definite article was becoming a permanent feature of Chumash languages. As in western European languages, its emergence is troublesome in that so many separate idioms have it, but it can't be traced to a common point of origin or even to one particular linguistic group. The definite article in any one Chumash dialect is not necessarily cognate morphologically with any other. Its development must be fairly late in Chumash history, though, as

evidenced, for instance, by the fact that the two Island dialects, Cruzeño and Roseño, have different forms: C pa-, Roseño ka-.

In the cases of Northern and Island Chumash, and most Central dialects, the definite article is not apparently related to the particles which originally denoted inalienable possession. Ventureño is the exception. In this dialect, si- (cognate with C si- 'second person singular') has been generalized for the definite article function.

This analysis, while not necessarily showing anything substantial about the interrelationships of the dialects, does show something about the nature of the proto-language. It points again to the fact that no one of the daughter languages is more like the proto-language than any other in overall structure.

#### Morpheme Cognates

All Chumash dialects are characterized by the frequent use of prefixes and suffixes with both noun and verb stems. The following selection is a sampling of those prefixes and suffixes. It includes those which can be seen to be cognate throughout the family. The majority of Chumash affixes, however, differ greatly

from one another phonologically, despite functional identity.

1. CAUSATIVE (verbal prefix)

I su- ~ sus-

B su- ~ -s-

P su-

O sV- ~ sVs-

C -ci-

\*SV(S)

2. FUTURE/INTENTIVE (verbal prefix)

I (no- 'future marker')

B -sa'-

P ša-, sa-

O -ku-

C -aku-

\*-Sa(') (PSC)

\*-ku-

3. ITERATIVE (verbal suffix)

B -iy

O -nan'a

C -wa

Each dialect division has a different form. No proto-Chumash morpheme can be reconstructed.

4. DESIDERATIVE (verbal prefix)

I -sili-

B -sili-

P -sili-

O -sna- ~ -šna- (from /Sina/)

\*SilV- ~ \*SinV-

5. PAST (verbal suffix); DEFUNCT (nominal suffix)

B -(i)waš

V -(i)waš

O -su

C -am'a

Each dialect division has a special suffix; no proto-form can be reconstructed.

6. of VISION, SEEING (verbal prefix)

I -qili-

B -xili-

O qi-

C -xili-

\*qil(li)-

### 7. INTENSIFIER

I nono' 'much, very, many' (verb stem)

B non'o 'very' (particle)

P nono- (particle)

O -nono (suffix)

C (ax-)

\*nono ~ nono'

In proto-Chumash, this form was probably an independent particle.

### 3. DIRECTIONAL (verbal suffix)

I -li

B -li ~ -lil'

O -lhV

C -la

\*lhVl

## 9. NOMINALIZER

I lam-

B -al

O la-, ł-, -ala-, łham-

C ala-

\*l

\*l is a general mark of nominalization of several types in Chumash. In different formations, it functions as relativizer, nominalizer, and subordinator, as well as (in Barbareño and Cruzeño) acting as an optional marker of the third person singular in verbs.

## 10. of the HAND, of GRASPING (verbal prefix)

I -tal-

B -tal-

O -toł-

\*tvł-

## 11. NEGATIVE (verbal prefix)

B (-e-)

P ni-

O mi- ~ ki-ni (negative imperative)

C -ani-

\*ni

There are several negative prefixes in Chumash;  
this represents only one of them.

12. LOCATIVE NOMINALIZER; INSTRUMENTAL

I -mu'

B -mu 'locative nominalizer'

O -mu 'locative nominalizer'

-smu' 'instrumental'

C -mu

\*mu

13. by means of FORCE

B aš-ni-

O s-ni ~ š-ni-

\*S-ni-

14. with the MOUTH

I aq-

B aq-

V aq-

P aq-

O aq- ~ q-

C aq-

\*aq-



## COGNATE SETS

In the following sets and reconstructions, I have used these principles. Where I have forms representative of Northern and Central Chumash, I have reconstructed a proto-Chumash form. The same is true if the sets consist of Northern and Island Chumash; however, there are few sets which are constituted only of these groups. Where I have only Island and Central Chumash attestations, and where the set is particularly interesting for some reason, I have reconstructed a proto-Southern Chumash form. All reconstructed forms can be presumed to be proto-Chumash (PC) unless otherwise marked as proto-Southern Chumash (PSC).

All the reconstructed forms can be considered stems. These stems are composed of a root and, optionally (though usually), one or more affixes. Roots are neutral as regards the form class they belong to; they are neither nominal, nor verbal, nor adjectival, but can be made so by the addition of the proper affixes, or by the application of the proper morphophonological rules. Roots are monomorphemic; stems may be either mono- or polymorphemic.

## 1. ADVISE, to

I susumun

O simu

\*si/umun

## 2. ALL

I yi la'

B li y'a (older B yila-)

V yɨ la'

C yem<sup>b</sup>la

\*yimla' (PSC)

B here shows a metathesis, and in all Central Chumzsh the \*m is deleted before \*l. In C, the \*i is lowered in the environment of the nasal consonant, and an epenthetic stop inserted between the nasal and liquid.

## 3. ALONE

I hawala

O ɬho

\*l-ho

The root here is \*l-, most certainly a reduction

of a longer form.

4. ALREADY

C k̄ila-

O k̄ila-

\*kVla-

5. ANT

I takay'as 'red ant'

B tak'ayas

O t qala' 'large red ant'

t qaya' 'small black ant'

\*tkaya' (plus sound symbolism)

6. ARMPIT

I toq'olo

B toq'olo

V tok'olol

toq'ololi 'put, have...under the arm'

O tiq'ololo

\*ti/uq'olo(lo)

The stem here is \*q'olo(lo); \*ti/u is a prefix.

## 7. ARRIVE

I kum  
 B kumi  
 O tut<sup>y</sup>im<sup>h</sup>hi  
 C č um

\*ki/um

O tu- and -<sup>h</sup>V are directional motion markers. This form shows the alternation appropriate to prefixes; the original root is retained only in the \*-m.

## 8. ARROW

(1)

I ya'  
 B ya'  
 V ya  
 P 'aya'  
 C ya'a

\*ya' (PSC)

(2)

V kal-awa  
 O c-ewe (cf. st<sup>y</sup>awa 'to prick oneself')  
 C 'ewe 'needle'

\*1-VwV

\*1- here can be analyzed as a nominalizer. The stem means 'sharp (along an edge or at a point)' (cf. CUT). C 'needle' and O 'arrow' mean 'that which is sharp'.

9. ARROYO

I mul'am  
 B 'ul am  
 O ɬ imi'  
 C ul'am 'river'

\*1'VmV

10. ASCEND

B napay  
 O tunepa ~ tinapa

\*-nVpa

11. ASHAMED, to be

I ax nisin  
 O qunosko

\*-nos-

## 12. ASHES

V 'ixša  
 O t/c- qsanu  
 C iqša

\*qSa

## 13. ASK, to

I esq en  
 B 'esq'en  
 O tisq ini

\*-VsqVnV

I, B -en represents an old verbalizer, corresponding to O -ini; PC \*-VnV.

## 14. BACK (body part)

I mît  
 B mît  
 V mît  
 O mîtî'

\*mVtV'

## 15. BALL

I            'apap  
 B            'ap'ap  
 O   tik'ul apapa

\*-apapa (reduplicated stem)

## 16. BAT (animal)

I   mak.al  
 B   mak al  
 O   mit<sup>y</sup>ala

\*mVkala

## 17. BATHE, to

I   kep'  
 B   kep'  
 V   ke'ep  
 O   t<sup>y</sup>e' ~ 'e'

\*k-ep'

## 18. BEAR (animal)

I   xus  
 B   xus  
 V   xus

P axis  
 O tuquski(') ~ tuhuski(')  
 C xus, xu'us

\*qus

19. BEE

I 'oyosow 'bee'  
 B 'oyosow 'bumblebee'  
 V 'oyosow 'bee'  
 O t-olo 'bumblebee'

\*olo (plus sound symbolism)

cf. the sound symbolism of ANT.

20. BEGIN, to

I sunan'  
 B sunun'a  
 V sununa  
 O tunena'

\*-nVna' (reduplicated stem?)

I,B,V su- is the causative prefix.



## 21. BLOW, to

(1)

I 'ax ti-pak

B 'aq tîp 'build a fire; blow, fan'

O qit pu

\*aq-(tV)-p-

(2)

V 'aqtîw'îw

C 'aqwuta

\*-wu- (PSC)

(3)

I axta-k<sup>h</sup>ît 'wind to blow'

C aqta kît 'wind'

\*-kVt

The roots here are \*-p-, \*-wu-, and perhaps \*-kVt, though this last is certainly complex.

## 22. BOIL, to

I 'aw'in

B 'aw'in

O kiwisi ~ kisiwi

\*-wi-

23. BONE

I s e

B s<sup>h</sup>e

V s e

O š e

\*Se

24. BOW (noun)

I 'ax

B 'ax

V 'ax

P 'aq

\*aqa

25. BREAK, to

(1)

I -k'ot (intrans.)

B ni-k'ot (trans.) (cf. k'ot 'be broken')

O sni-t<sup>y</sup>'itì (trans.)

\*k'oto

(2)

I č'eq  
 O peleqe 'broken'

\*eqe

Cf. B č'eq 'split'.

## 26. BREAST

I k utet  
 B k utet  
 V k utet  
 P k utet'  
 O t<sup>y</sup>ete'  
 C tutu (?)

\*kVtet

Cf. CHEST, to which \*kV- is related (\*kVwV- 'chest'), perhaps as a combining form. The root is represented by \*-tet, a reduplicated form, from \*te-. C tu(tu) is related to this.

## 27. BREATHE; BREATH

I kalaš  
 B kalaš

O qst<sup>y</sup>eɬha

\*kal-haS

I ahaš 'soul'

B 'ahaš, ahašiš 'heart; ghost; spirit'

O t<sup>y</sup>eɬ ha 'soul'

\*-haS

Cf. V mu'alcuyalhaš 'a silent person'

28. BRING, to

I ik<sup>h</sup>ɪli

B 'ik ɪl

O t<sup>y</sup>ɪɬhi

\*kVlhi

\*-hi is a suffix, the root being \*kVl.

29. BURN, to

I ixut

V ixut (intrans.)

sixut (trans.)

B 'ixut

O siqi (trans.)  
     qu (intrans.)

\*qi/ut

Because of the vowel alternation, \*qi/u- may be taken as a prefix; the remnant of the root is in \*-t.

30. COST, to

I piw' ; piw'en/č 'to cost, be expensive'  
 B piw 'sell; value, cost, price'  
 V pi'iw' 'to cost, be worth'  
 O piwini 'to be worth'

\*piw'

31. CARRY, to

I nu-kum  
 O t<sup>y</sup>ḱ

\*kum

Cf. ARRIVE, which has the same stem.

32. CARRY ON BACK, to

I sḱp'  
 B sḱp

V sɨ'ɨp

O sɨpɨ

\*sVpV

33. CHEEK

I po'

B po'

V po

P po

C po

\*po' (PSC)

34. CHEST (body part)

B kɨw

V kɨw

O tʲɨwɨ

C kɨw

\*kVwV

35. CHIA

I 'il'epeš

B 'il epeš; 'ilep 'make chia mush'

V it'ep 'make chia mush'

O ɬ'ipɬ

\*'epV-

36. CANOE

I tomol

B tom'ol

C t molo

\*tomolo (PSC)

37. CLITORIS

I ic'ele

V ic'ele

O ɕ<sup>h</sup>ele

\*Cele ~ \*C'ele

38. COLD, to feel

I toxom'

B koqton

oxto 'person to be cold'

V toqom

O q/kto

\*toqom ~ \*qotom

In this set the reconstruction \*qotom is probably to be preferred; \*qo- is a prefix, \*-tom is the root. The Obispeño form would derive regularly from this by loss of the final \*-m and loss of vowel.

39. COMB, to

I tik ikš

B tik iks

C tut<sup>y</sup>iksi ~ tit<sup>y</sup>iks (combining form as in  
tit<sup>y</sup>iksmu 'comb, small  
brush')

\*ti/ukikS

40. COME, to

(1)

I yɨti

B yit'i

V yɨti

C yet

\*yit-i

(2)

I elew

B 'elew



V qalaw  
 O num-'eɫhe 'come down'  
 qtoɫho 'appear, come to visit'

\*VlhVw

This set shows stem ablaut /e ~ o/.

41. CONCERNED WITH, to be

I axtak  
 O taki', tak/qiy'a 'to concern, be important to'

\*tak

42. COOKED

I ipšel (s-ipšel 'to cook')  
 B 'ipšel  
 V ipšɪl (š-ipšɪl 'to cook')  
 O pšɪ (si-psɪ 'cook thoroughly; ripen')

\*pSel

43. COUGH, to

I oxoxon  
 B oxoxon  
 O q<sup>h</sup>oq<sup>h</sup>o

\*oqoqo- (reduplicated stem; onomatopoeic)

44. COVER, to

I iqmay

O skaqmi (from\*s-ki-aqmay?)

\*Vqmay

45. CRACK, SPLIT, to

I wati-č'eq

tipe-č'eq

B wi-č'eq

V ke-č'eq

O spel eqe 'split...off'

\*-eqe

Cf. BREAK (2) which has the same stem.

46. CUT, to

I 'iwawan

B 'iwawan; 'íwî 'knife'

V 'íwî

O 'íwî(')

\*'iwa (plus reduplication)

Cf. ARROW (2)

47. DARK-COLORED, to be

I šoyin

V šoy; šošoy

O piso'

\*Soy

48. DAY

(1)

I qsi

O qši'

\*qSi

(2)

B 'išaw 'to shine, of the sun'

V 'išaw

O čašinV (V = i, ĩ, a; all three are attested)  
'to dawn'

C -išašin 'to dawn'

\*-iSa-

## 49. DEAF

I 'uqštu'  
 B 'ukuštu'  
 V 'uqtu  
 O q/kšištu

\*tu'

The root is the same as EAR, which see. The prefixes are problematic.

## 50. DEEP

I liyon  
 B liy'on  
 O qilhi

\*l-hiy

## 51. DIE, to

I aqšan  
 B aqšan  
 V aqša  
 O q/ksa

\*qSa

## 52. DIRT

- I nuyič, 'uqš-nuy  
 B nuy 'dirt, grime, rust'  
 O šišnuyu 'to get dirty'

uyu

## 53. DRINK; THIRSTY, to be

(1)

- I 'aqmil 'drink'  
 B 'aqmil 'drink'  
 V 'aqmil 'drink'  
 O 'aqmilha 'be thirsty'  
     qimi 'drink'  
 C 'aqmil 'drink, be thirsty'  
     (cf. mihi 'water')

\*aq-mihi-l-ha

(2)

- I 'oqšo'o' 'be thirsty'  
 B 'o' 'be thirsty'  
 O yo 'drink'

\*o-

Cf. also WATER, URINATE

## 54. EAR

I tu'

B tu'

V tu

O tu'

C tu, tu'u

\*tu'

## 55. EARTH

I šup

B šup 'earth; god'

V šup

P a-šup

C šup

\*šup (PSC)

O pu 'earth, land' cannot be clearly related to the Southern Chumash forms, but perhaps is to be compared with C qopo 'world'.

## 56. EAT, to

I 'uw

B 'uw

V 'uw

P 'u'u 'eat it!'

O 'u', 'uw, 'iya

C 'uwma 'food'

\*uw

57. EYE, FACE

I tix

B tiq

V tiq

P taq

O tít<sup>y</sup>í

C teč

\*tVq

58. EYES, FACE, having to do with

I yuw'eq(š) 'to have sore eyes'

ni-weqweq 'make a face'

O weq'e 'having running eyes, bleary-eyed'

\*weqe

59. FAR, to be

I mīk

B mīk

V mî'îk; mîkî'î 'go far awy'  
 O mît<sup>y</sup>î, mîkšî  
 C mîkîč

\*mVkv

This form may be compared to Proto-Uto-Aztecan  
 \*meka (Miller 1967, p. 34).

60. FAT

I s-xil  
 B -xil  
 O k/qilhi

\*qilhi

61. FIGHT, to

I axi-č  
 O s-equ  
 C naml-exik

\*aqi/u

62. FIRE

I nî  
 B nî



V ni

P ni

O ti-ni

C ne

\*ne

63. FLOWER

I pey'

B spey'

V (c,s)pe'ey

P spe

O (č)pe'

\*pey'

64. FLEA

I step

B step

V ctep

\*-tep (Proto-Central Chumash)

Cf. Proto-Uto-Aztecan \*tepu (Miller 1967, p. 35)

65. FLY (insect)

I 'axunpes

B 'axulpes  
 V 'axunpes  
 O tapuleqe

\*axulpes

The Obispeño form shows metathesis of \*/q/ and \*/p/,  
 and epenthesis of /e/.

66. FOLLOW, to

I uleq-pey  
 B 'uleqpey  
 V uleqpey  
 O tuspi

\*pey

67. FOOD (cf. EAT)

I 'uwumu'  
 B 'uwum'u  
 V 'uwmu  
 O 'uwmu  
 C 'uwma

\*uw- 'eat' plus \*-mu (nominalizing suffix)

## 68. FOOT

I tem'

B t'em' 'sole of foot'

V tem'

O teme'

\*teme'

Cf. Proto-Uto-Aztecan \*tem 'heel' (Miller 1967, p. 41)

## 69. FORGET, to

I tam'ay

B t'amay

V tam'ay

O ne 'lose oneself, get lost, be late'

C t-may(a)

\*may

## 70. FULL FROM EATING, to be

B 'aqti'

O qti'

\*qti'

## 71. GET UP, to

I kuta'

B kut'a  
 O t<sup>y</sup>eta', kšeta'

\*kVta'

72. GOPHERSNAKE

I pšoš  
 B pšoš  
 V pšoš  
 O c-psoso  
 C pšoš, pšo'oš

\*pSoSo (reduplicated stem)

73. GRASSHOPPER

I tuq  
 B tuq'  
 O tiqu

\*ti/uqu

The root is \*-qu.

74. GULL sp.

I 'onom yo'  
 B 'onom'yo

O č-miya

\*miyV

75. HAIR

I šuš ('iš<sup>h</sup>uš 'pubic hair')

B šuš 'fur' ('išuš 'pubic hair')

O susi 'hairy'

C 'ikšuš 'pubic hair'

\*SuSV 'hair, fur' (reduplicated stem?)

Cf. Proto-Numic \*su(u) (M. Nichols, personal communication)

76. HAND

I pu

B pu

V pu

O pu

C pu'u (in wačpu'u 'finger')

\*pu

77. HANG, to

I wayan

B wayan 'hang; float'

V iman-wayan

O si-waya 'hang...up'

\*wayan ~ \*waya

Many forms are buildt on this stem. Some examples follow.

SWING, to

I maq-wayan

V maq-wayan

O qi-wayan 'swing back and forth'

EARRINGS

I su-wayan

B su-wayan-iš

V su-wayan

O (qiman'a related?)

C sutaway

MOON

I 'aw ay'

B 'aw'ay

V 'awhay'

P 'ahwa

O t-awa'

C 'awhay' (from V?)

\*'ahway' (from 'alh-way' 'that which hangs')

78. HEAR, to  
 I 'itaq  
 B 'itaq  
 O taqini

\*taq

79. HEEL  
 I 'osos  
 B 'osos  
 V 'osos  
 O 'ososo  
 C 'osos

\*'ososo (reduplicated stem)

80. HELLO (greeting)  
 I hak u  
 B hak u  
 V hak u  
 P hak u  
 O hat<sup>y</sup>u

\*haku

81. HOLE  
 I loq

B loq, lok  
 O lo'  
 C loq

\*loq

82. HOLE, CAVE, DEN

I šiš  
 B šiš  
 V šiš  
 O sî

\*Si ~ SiSV

83. HOMOSEXUAL, to be

I 'axi  
 O 'aqi'

\*'aqi'

84. JIMSON WEED

I momoy  
 B mom'oy  
 V momoy  
 O moyoq  
 C mom'oy

\*mom'oy from \*moy



The O form is a compound formed of the stem  
\*moy and the verb stem (h)oqo 'to sleep'.

## 85. KNEE

I 'apam' (naxc'-apam' 'kneel')

O pim'i 'kneel'

\*pVm'V

## 86. KNIFE

I 'iw

B 'iw 'to cut'; 'iwɪ 'cutting implement'

V 'iwɪ 'cutting edge' ; 'iw 'knife'

O 'iwɪ(') 'to cut'

C qi'iw

\*'iw

Cf. also ARROW, CUT for other forms of stem.

## 87. LIE DOWN, to

I sotoy'in

B sutoy'in 'lay down, put to bed'

ton' 'be lying down'

toy'in 'lie down!'

to'onla 'go and lie down!'

V otoy'i

O ɫto'

\*toy' ~ ton'

88. LIVER

I 'al'

B 'al'

V 'al

O c'ala

C cal

\*c-al'a

89. LOOK, to

I k uti

B k uti

O -tʲɪti' (bound form)

\*kuti ~ \*kuti'

90. LOUSE

I šik 'head louse'

B šik 'head louse'

V šik 'louse'

O (c)pšeq<sup>h</sup>e

\*Seke

91. LOW TIDE

I qiw'in

V qiwì 'tide to go out'

O qiw

\*qVw

92. MANY, MUCH

I 'ihì

B 'ixì

O 'exu. 'equ

C ('inuhuč related?)

\*equ

93. MEAT, BODY

I 'amìn'

B 'am'in

O 'imì(')

\*'Vmin'

94. MOIST, to be

I so'o'oč 'to wet' (trans.)

O so' 'moisten'

\*so'

This stem comes from the causative \*SV- plus the root for water \*o.

95. MONEY

I 'alaquc'um 'clam sp.'

'alc<sup>h</sup>um 'money'

B 'alaquc'um 'clam sp.'

'ančum 'money'

V 'alč<sup>h</sup>um

P 'alčum

O ɛ'anaqucu

C 'alaqucum

\*'ala-qu-Cum 'clam sp.; money'

~ \*'ana-qu-Cum

\*Cum is the root; \*qu- is a prefix; \*ala- is a nominalizer, related to C 'ala- '3rd sg. verbal prefix', B al' 'prefix used for 3rd person, to mark subordination, or when subject preceds" (Beeler 1976, p. 24).

## 96. MOSQUITO

I piwĩ'

B piw'ĩ

O (t)piwĩ

C p wew'e

\*pewe(we)'

## 97. MOTHER-IN-LAW

I mĩs

B mĩs 'mother-in-law, father-in-law'

O mĩšĩ

\*mVSV

## 98. MOUNTAIN LION

I tukem'

B tuk'em'

O tet<sup>y</sup>e, tekš'e

\*tVkem'

## 99. MOUSE

I qolol

B klol' 'cricket (?), dragonfly (?)'

O (t)qlolo, klolo

C q<sup>h</sup>lolo 'rat'

\*qlo (plus reduplication)

Cf. TADPOLE. This stem means "small creature".

100. MOUTH

I 'ɨk

B 'ɨk

V 'ɨk

P 'ɨk

O 'ɨtʲɨ

C 'ɨč

\*'Vk

101. NAME

I tɨ

B ti

V tɨ

P tɨ

O ti

C te

\*ti

This is also used as a prefix; cf. B -ti- 'of speech action'.

## 102. NECK

I ni'

B ni'

P ni'

O ni'

C ne

\*ni'

## 103. NECKLACE

I 'el'

B 'el'

V 'el

O tel'e

\*el'

## 104. NERVE

I 'axpilil'

B 'axpil'il

V c'axpilil 'sinew, bowstring'

O c qspiłhi

C aqpilil, caqpilil(i) 'bowstring'

\*pilhil

105. NEST

I pat

B pat

V pat

piti'

\*patV ~ \*patV'

106. NEW, to be

I 'ikimin

B 'ikimin

O 'ame

\*VmVn

107. NOW

I k ipi'

B k ipi'

V k ipi'

O t<sup>y</sup>ipi'

\*kipV(')



108. OAK spp.

(1)

I kuw'

B kuw'

V kuw

P akuw'

O t<sup>y</sup>uwu'

C kuwu, ku'uw

\*kuwu(')

(2)

I ta'

B ta'

O ta'

\*ta'

109. ONE-EYED, to be

I c'iqi<sup>h</sup>w'

O qiq'<sup>h</sup>i

\*qVw'

110. OPEN, to

I 'uč-q<sup>h</sup>al

B 'uš-kál

V 'uš-qal

O tʲe-tʲa, (k)še-tʲa 'open..., open up, spread...'

\*kal

Cf. BREATHE, BREATH

111. OVERCAST, to be

I iqmay

O tiq'ema

\*iqVmay

112. PELICAN

I hew

B xew'

V new

O sewene

C hew

\*sew

113. PERSON

I ku

B ku

V ku

O ti-t<sup>y</sup>u

\*ku

114. PET

I qo'

B qo'

V qo

O qoqo' 'pet, animal'

\*qo'

115. PICK UP, LIFT, RAISE

I sal-apay 'to raise' (related?)

B salay

O šlala (from /šilala/)

\*lay

116. PRICKLY PEAR

I xɿ'

V xɿ'ɿl

O (t)qɿ

C q'oloy

\*qV'

## 117. QUAIL

I takak

B takak; takaka 'sound that quail makes'

O takaka

C tkaka

\*takaka (onomatopoetic)

## 118. RABBIT/JACKRABBIT

(1)

I ma' 'jackrabbit'

B ma' 'jackrabbit'

V ma 'hare, rabbit sp.'

P ama' 'jackrabbit'

O (t)ma' 'rabbit'

C ma 'jackrabbit'

\*ma'

(2)

I kun' 'rabbit'

B kun' 'rabbit'

V kun' 'rabbit'

P akun' 'rabbit'

O t<sup>y</sup>uni' 'jackrabbit'

C kun' 'rabbit'

\*kuni'

119. RAIN, to

I tuhuy

B tuhuy

V tuhuy

O tu

C tuhuy

\*tuhuy ~ \*tuy

120. RED

I qupe 'poppy'

B qupe 'poppy'

O ɬ-k/qupe

\*qupe

121. ROADRUNNER

B pup'u

O (t)pu'

\*pu'

122. RUB, to

I nim'uy

O stumu

\*muy

123. SALT

I tip

B tip

V tip

P atipì

O tepu'

\*tepu(') ~ \*tipu(')

124. SAVE (RESCUE), to

I sunin-apay

V sun-apayi

O sn-apa, sqin-apa

\*apay

Cf. PICK UP, LIFT, RAISE

125. SEED

I 'amìn'

V 'amì, c'am'ì

O c'imì'

\*'VmVn'

Cf. MEAT, BODY

126. SKUNK

I taxama

B taxama

V taxama

O t qema

C t xamal

\*tVqema

127. SMOKE

I tow'

B tow'

V itow

P atow'

O (č)tuwo'

\*tuwo'

128. SNAIL, sea

I q'ímí'

V q'ímí'

O ɬ-q'ímí'

\*q'VmV'

129. SPEAK, SAY, to

I 'ip

B 'ip

P 'ip

O 'ipi

C 'i

\*'ipi(')

130. SPLIT-STICK RATTLE

I wansaq'

V wansaq

O wa šaqa, wacsaqa, wacsaq'a

\*wanS-aq'a ~ \*wacs-aq'a

Cf. CRACK, SPLIT

13. SPREAD OPEN

I mexkeken

su keken

B kek 'to grow'

O niput<sup>y</sup>et<sup>y</sup>a

\*kek-an



132. SQUIRREL, ground

I 'emet

P 'em'et'

O teme'

\*emet' ~ em'et'

133. STEPS

B taya-šnipit

O teye

\*tVyV-

In B, tVyV- is a verbal prefix meaning 'to do with the feet'.

134. STICK TO, to

I pey

B pey

V pey

O pe'

\*pey ~ pey'

135. STICKY, to be

I pil iy

O piłhi

\*pilhiy

136. STONE, ROCK

I xɪp

B xɪp

V xɪp

O (t)qɪpɪ

\*qVpV

137. STRAIGHT

V kɪyɪmi

O kiyeme

This set is suspect as a late borrowing into Obispeño, as no form with \*q- is found in the corpus. This would normally be \*t<sup>y</sup>iyeme.

138. SWORDFISH

I 'eleyewun

B 'el yew'un

V 'el yewun'

O 'eleyewu(')

\*'eleyewun'

## 139. TADPOLE

I qlo qlo

B knoyknoy (related?)

O č-łqyołqyo

\*qlo ~ \*qyo

Cf. MOUSE

## 140. TAIL

I tel eq'

B tel'eq

V teleq

P telex

O telhe'

\*telheq'

## 141. TAKE OFF, to

I se-qen

B se-qeč

V se'qe

O siqwa (from /siqiwa/)

\*qe

## 142. TEARS

I t̄inik'

B tin'ik

V t̄inik

O tiniž'

\*tinik'

## 143. TONGUE

I 'elew

B 'el'ew

V 'elew'

O 'el̄hew(')

\*'el̄hew'

The final -w in Obispeño is not regular.

## 144. TOOTH

I sa

B s<sup>h</sup>a

P sa

V sa

O ša

C c<sup>h</sup>a'a ~ -asa

\*Sa

145. URINATE, to

I 'oxšol

B 'oxšol

V 'oxšol

P 'oxšo

O qso'

C aqšol 'urine'

\*Sol'

146. VOMIT

I paš

B paš

V paš

O pašì, paspa

\*paS(V)

Cf. Proto-Uto-Aztecan \*pis 'vomit' (Miller 1967, p. 62)

147. WALK, to

See STEPS

148. WARM SELF, to

I oxmol

O qumo

\*mol

149. WATER

I 'o'

B 'o'

V 'o

P aho

O (t)o'

\*'o'

150. WHALE

I paxat

B paxat

V paxat

O (t)pxatu, (t)pqatu

C puqlu (related?)

\*paqat(V)

151. WOOD, TREE, STICK

I pon'

B pon'

V pon'

O pono'

C pon'

\*pono'

152. WOODPECKER

I pulak'ak'

B pulak'ak'

V čulakak

O (t)pilak'a

\*pVlak'a(k')

These forms are onomatopoeitic; the Ventureño form is problematic.

153. WRINKLED

I šok šok

B šok<sup>h</sup>só'

O šoqšo(')

\*Sok' (plus reduplication)

154. YAWN

I šašan

O sasa

\*San (plus reduplication)

Cf. B xašam; V šašham.

155. YELLOWJACKET

B 'iy

V 'iy

O (t)iyi

\*iyi ~ \*iyi'

SPECIAL SETS

The following sets illustrate the correspondence of /m/ and /w/. No reconstructions are attempted.

156. AUNT

I hawa'

B xaw'a

O hama'

157. FINGERNAIL

I sixway'

B sixway'



O (t)šiqama  
C siqway

## 158. LOST, to be

I wɨwɨ'; manɨš 'to be missing, lost'  
B wɨw'ɨ 'lose one's way'; niwon 'to lose'  
V wɨwɨ; manɨs  
O nema; ɭhuma

## 159. MAKE, DO, to

I 'eqwel  
B 'eqwel  
V 'eqwel-us  
O 'aqmanu  
C 'aqwel

## 160. NETTLES

I xwapš  
B xwapš  
V xwapš  
O (t)qmapsɨ  
C qwapš

## 161. NIGHT, DARK, to be

I ulkuw  
B s-ulkuw  
V ulkuw

O ɬ-tʰimi

162. SHOOT, to

I wɬl

B wɬl

V wɬl

O miɬhɬ 'shoot...'

163. STAR

I 'aqiwo

B 'aqiwo

P 'a'iwo

O (t)k/qšimu

164. WILD

I itiɬwɬ'

O timɬn'i

### NUMBERS

The proto-Chumash forms for the numerals 'one', 'two', 'three', and 'four' can be reconstructed.

165. ONE

I pakaš  
 B pak'a  
 V pake'et  
 P pakas'  
 O paksi 'four'  
 C ismala (? related)

\*paka- plus suffix

166. TWO

I 'išk om'  
 B 'išk óm'  
 V 'išk om'  
 P 'išk om'  
 O 'est<sup>y</sup>u'  
 C 'išč om

\*eSkom'

167. THREE

I masix  
 B masix  
 V masiq  
 P masix  
 O misì'  
 C masix

\*mVsiq ~ \*mVsiq'

168. FOUR

I skumu

B skum'u

V ckumu

P skumu

O skom'o 'eight'

C skumo

\*Skumu ~ \*Skum'u

## OVERVIEW OF CHUMASH STRUCTURE:

### The Nature of Proto-Chumash

There are certain phonological, morphological, and syntactic features which characterized the Chumash languages as a family. None of these are found only in Chumash, but their combination in that family and the details of their occurrence delineate the family uniquely.

#### Vowel Harmony

Of the known Chumash dialects, only the Central groups exhibit a highly developed, productive system of vowel harmony. The rules basically specify that the high vowels /i/ and /u/ can co-occur with themselves or with low vowels /e/, /a/, /o/ in any combination within a stem, but low vowels which co-occur must be identical. Sequences such as /\*e-a/, for instance, are not permitted in Central Chumash. The possibilities for co-occurrence of /i/ with any other

vowel must be specified individually, but its occurrence is not free (see Applegate 1971). This lack of patterning with other vowels in the system has been thought to be evidence for the external origin of the high central vowel in Chumash.

Looked at in one way, the Central Chumash system can be seen historically to have derived from a system of vowel identity; the rules which specified that vowels which agreed in height must also agree in frontness or backness became less obligatory, with the high vowels being affected first, the low vowels retaining that restriction. In addition, a rule which specified that high and low vowels could not co-occur would have been lost.

There is some evidence from Northern Chumash that this other kind of vowel harmony, namely vowel identity, was once more widespread in Chumash. All vowels within many Obispeño stems are identical:

'enhene 'laugh aloud'

qeme 'make into pulp'

There are also numerous stems of the shape  $CV_1-CV_2CV_2$ , where  $CV_1-$  is clearly a prefix:

num'ełhe 'go down'

In addition, there are a number of affixes for which no underlying vowel can be specified; the vowel which the form has is determined by and identical to the last vowel in the stem:

mi-qipini-łhi 'I am looking at you'  
 (-łhV 'second person singular objective suffix)  
 mi-taqin'ı-łhı 'I hear you'

There are in Obispeño, however, many exceptions to the process of vowel identity, and many of them violate the basic rules of vowel harmony as found in Central Chumash.

nema 'lose oneself, be late, get lost'

łnet<sup>y</sup>a 'coyote' (lit. 'one who stands up, dances')

These exceptions are not as common as those cases which in fact adhere to the rules, but there are enough of them to indicate that vowel identity and vowel harmony were non-productive processes in Obispeño at the period for which we have attestation.

For Island Chumash, little is known. There does not appear to be any vowel harmony or identity operating productively, but as in Obispeño, the percentage of forms which adhere to the rules is high. Forms like yem<sup>b</sup>la 'all' occasionally occur.

When and how vowel harmony may have originated is not clear. It seems likely that it is related in some way to what I have called vowel ablauting, the alternations of /i/ ~ /u/ and /e/ ~ /o/. Obispeño and to some extent Cruzeño are closest to the original system of vowel alternations based upon rules of an

assimilatory type, but even it is defective in that all we find are a few productive remnants and many tantalizing hints about what was once a more productive process in all the dialects.

### Sibilant Harmony

With sibilant harmony we are in much the same position as with vowel harmony in that there is evidence that the rules which govern it were once far more productive than what we find in synchronic attestations. Sibilant harmony is productive in the Central dialects, less so in Obispeño, and virtually non-existent in Island Chumash. In both the latter dialects, evidence supports earlier productivity.

The operation of sibilant harmony is summarized by Beeler (1970): "If the final sibilant in the word is a blade consonant, then all the preceding sibilants of the word, or even the phrase, will, in principle, be blade sibilants; but if it is an apical sibilant, then they will appear as apical sibilants". It is thus a case of regressive assimilation.

Barbareño	šaqutinan'iš	'story'
	ksaqutinan'us	'I tell him a story'



kasunan 'I command'

ka'alašunaš 'he's the boss'

Harrington also characterizes this process in Ventureño.

What we may term a sibilant harmony in the full sense in which we speak of vowel harmony in language is the retrogressive action of a sibilant in assimilating preceding sibilants to its own variety, dull or sharp as the case may be. Thus an š sound causes preceding s sounds to be lowered or š-ized, while on the other hand an s sound reaches back and causes preceding š sounds to be raised or sharpened into s sounds.

(Harrington 1974, pp. 4-5.)

In Obispeño, we find numerous alternations, now mostly unconditioned, between /s/ and /š/. For example, the desiderative prefix /Sina/ shows up as [sna] and [šna]. Each of these occurs even where there is not other sibilant in the word which could condition it.

mi-sna-'uw ya-t-qí' 'I want to eat prickly pear'

mi-šna-tik'ele 'I want to throw it away'

mi-šna-snapa-lha 'I am going to save you, I want  
to save you'

As can be seen in several of the cognate sets (e.g. ASHES, BONE, COMB, COOKED) it is sometimes impossible to decide whether a proto-form should be reconstructed with \*/s/ or \*/š/. If Obispeño had no alternations, we would be able to use the consonant in that dialect as the base form, but it is certain that Obispeño at one time also participated in productive sibilant harmony and the language is full of the residue of the process. Thus, it is no more reliable than any other dialect (including Cruzeño, about which the same thing could be said). Other indirect evidence for the fact that Obispeño at an earlier stage had productive sibilant harmony is the fact that \*/k/ is preserved as [k] in the environment of \*/s/ or \*/š/ (\*S/), indicating that the sounds \*/s/ and \*/š/ in proto-Chumash were classed similarly in terms of their effects upon neighboring consonants.

There is no doubt that /s/ and /š/ in modern dialects are phonemically distinct, as there are minimal pairs (Beeler 1970, p. 16, gives several examples: e.g. mes 'to cross over'; meš 'sack, bag'). The distinction had become obscured historically by the operation of sibilant harmony rules much in the way that vowel alternations and vowel harmony have obscured original vowels. The most careful analysis will be



pa-p-'olotoč > p<sup>h</sup>p'olotoč  
'your quiver'

Spontaneous, non-distinctive aspiration of consonant clusters and sometimes consonants in word-final position also occurs in the family.

Cruzeño	-k <sup>h</sup> toton	'low'
	p <sup>h</sup> tanîm	'the sun, the day'
		(from pa-tanîm)
	mataq <sup>h</sup> wi	'I understand'
	pa-č-'iç <sup>h</sup>	'my mouth'
Obispeño	qik <sup>h</sup> smu'	'existence, life'
	q <sup>h</sup> mapsî ~ qmapsî	'nettles'

In general the appearance of such aspiration is sporadic and unpredictable. It has advanced furthest in Cruzeño, if the percentage of forms with clusters so aspirated is any indication of productivity.

### Sound Symbolism

Sound symbolism, or a system of consonantal and vocalic ablaut signalling certain types of relationships such as diminution, augmentations, or other semantic shifts, has been widely reported in California (see

for example, Gamble 1975, Harrington 1974, Langdon 1971, Nichols 1971, Teeter 1959). In Chumash it has never been widely reported, but it is certain that there was a significant amount of sound symbolism in Chumash dialects. There are cases which have been described under headings other than 'sound symbolism' but which can be interpreted, in fact, as evidence of consonantal and perhaps even vocalic ablaut.

Harrington noted extensive sound symbolism for Ventureño.

Any part of speech can be diminutivized by changing its consonants as follows:  
 s > č; c > č; š > č, sometimes c;  
 č > c; l > n; x > q....Although not frequent in the language, it permeates the whole structure and lexicology and enriches or subtilizes the available means of expression."

(Harrington 1974, p. 8)

Applegate, however, say "there is no evidence of such a process in Ineseño" (1972a, p. 53). This is somewhat misleading, for he does in fact discuss at length certain alternations of consonants: /l/ and /n/; /-n/ and /-'/, and /q/ and /x/ (p. 61+).

Ineseño	kalaš	'breathe'
	kanaš	'pant'

Of this example, he says,

...this is the only evidence of what might be called sound symbolism linked with this alternation" (p. 62).

Beeler has not reported it for Barbareño. If it existed in Cruzeño, the evidence is not definitive. In Obispeño, in even the limited corpus we have, there is sufficient evidence of its existence to posit productivity.

Ineseño	mutey' 'to be near'
Barbareño	mut'ey 'to be near'
Obispeño	timete' 'to be near'
	timeče' 'to be very near'

Ineseño	taq'ayas 'ant'
Barbareño	taq'ayas 'ant'
Obispeño	tqaya' 'small black ant'
	tqala' 'large red ant'

Between dialects there is evidence of alternations of this nature, where only one form is preserved in any given dialect.

Ineseño	šow 'ankle'
Barbareño	šow 'ankle'
Obispeño	solo' 'ankle'

Ineseño	'oyosow	'bumblebee'
Barbareño	'oyosow	'bumblebee'
Ventureño	'oyosow	'bumblebee'
Obispeño	tolo	'bumblebee'
Ineseño	tomol	'canoe'
Barbareño	tom'ol	'canoe'
Ventureño	tomol	'canoe'
Purisimeño	tomoł	'canoe'
cf. Ventureño	'ontomoy	'boat' (also 'trough' ?)
Ineseño	'am̄n'	'body'
Barbareño	'am'in	'body'
Ventureño	'amam̄	'body, meat'
Purisimeño	'am̄	'body, meat'
Obispeño	'im̄(')	
Cruzeño	p-am'ay; ala-p-am'ay	'body'
Ineseño	q olol	'mouse'
Ventureño	q'onon	'mouse'
Obispeño	(t)q/klolo	'mouse'
Cruzeño	q <sup>h</sup> lol'o	'rat'

It is possible that the alternation of /m/ and /w/ in Chumash which is so resistant to analysis may be

historically a kind of consonantal ablaut as yet undescribed for California, except perhaps in Karok (see for instance, Bright 1957, p. 40).

### Syntax of the Sentence

A salient feature of the syntax of the Chumash sentence is its usual word order: Verb-Object-Subject (VOS). Other orderings are possible, but they are marked by the use of certain particles and it is usually possible to analyze them as emphatic or embedded constructions.

The predominant word order in Central and Northern Chumash can be established by examples of the following type:

Obispeño	ča yaktakaka yatqawì chases-the quail-the dog 'the dog chases the quail'
Ineseño	saqniwiluswun a'eneqneq ek' a'ihìy' thinks of them-women-that man 'that man thinks of women'

Island Chumash is more difficult to analyze because of a lack of syntactic information. Beeler and Klar



We hold that the evidence for word order in Cruzeño, meager as it is, will permit the following interpretation. At a stage anterior to our records this language, like its Chumash relations, employed a word order with verb in initial position. (It is not possible to tell whether, at this older stage, the object noun phrase preceded the subject noun phrase when both those sentence parts had that form, thus yielding the order VOS, which is characteristic of all the mainland; but nothing we have excludes this probable structure.

(Beeler and Klar, unpublished Island Chumash sketch, p. 51)

At the end of its existence, Cruzeño did not exhibit a predominantly VOS order, but since other representatives of Southern Chumash and also the otherwise divergent Northern Chumash do, and since internal evidence points to it, we can be certain that the later word orders in Cruzeño (mainly SVO) were independent Island developments. VOS reflects the proto-Chumash preferred order of constituents in the sentence.

#### Implications for Proto-Chumash

The Chumash languages share many broad features between them, and often differ only in details. I am certain that if full attestations were available for dialects such as Obispeño, Purisimeño, and Cruzeño, this view would be confirmed rather than disproven.

Chumash dialects, in fact, have so many features in common that it is easy to see the broad outlines of the grammar of the proto-language. It was, syntactically, a language characterized by initial position of the verb in most types of sentences. The object followed the verb directly; the subject noun followed the object (VOS). Morphologically, proto-Chumash was composed of roots and affixes on the one hand, and particles on the other. Roots, neutral as to nominal or verbal function, could be combined with affixes to form stems, specified for nominal or verbal functions (see Cognate Sets). In the modern languages, stems had often become lexicalized, and processes by which they were originally formed had lost their productivity. This is one of the main causes of the internal diversity in Chumash dialects. Proto-Chumash had a large and productively-used class of particles which supplemented stems; again, one of the main reasons for differences among daughter languages is the different ways in which the original functions of these particles evolved in the dialects over

time. Phonologically, proto-Chumash was no more complex than any modern dialect. Its phonemic inventory included:

\*/p, p', t, t', k, k', q, q', ', S, C, S', C', h,  
m, m', n, n', w, w', l, l', y, y', i, e, a, o, u/.

There were processes whereby aspirated consonants were formed. These are well-understood and are reflected in the daughter languages as the processes of aspiration of geminate clusters, dissimilation of consonant clusters, and coalescence of consonant and /h/.

Proto-Chumash had vowel alternations (ablaut) of \*/i/ ~ \*/u/ in prefixes and \*/e/ ~ \*/o/ in stems.

There was also some kind of vowel harmony or vowel identity. Sorting out the rules for the interaction of the two types of vowel alternations is of primary importance for the future. Proto-Chumash had sibilant harmony; it is not certain whether there was a phonemic distinction between \*/s/ and \*/š/ as in the daughter languages.

Proto-Chumash was probably more analytic than the daughter languages generally, with more independent particles which in the modern dialects have often (though not always) become proclitic, and have coalesced with forms in the daughter languages (e.g. the definite articles). What Applegate calls "inner" prefixes may

represent the true proto-language prefixes which could be added to roots to derive stems. The same would be true for suffixes. Forms of the type we find in the objective suffixes may well represent old postclitic particles, now fused with their verbal antecedents, while noun- and verb-deriving suffixes represent true proto-suffixes. Applegate's "outer" prefixes would represent old independent particles. In general, then, modern Chumash shows a tendency to be more incorporating and less analytic than proto-Chumash.

These broad outlines are permitted us by the data we have now and the analysis which can be done currently. They are suggestive of directions that future research must take in filling in the details.

## CHUMASH AND HOKAN

The Chumash family has for decades commanded a great deal of speculation from those working with California languages. It is one of only a few closely-knit family groups with more than two or three demonstrably related family members. The Pomoan languages and the Yuman languages constitute similar family groups. Chumash has also been of linguistic interest since Dixon and Kroeber and Sapir included it in the Hokan stock. The Hokan problem in general and the supposed constituent languages in particular has fascinated many scholars, and the problem of grouping Chumash with other California languages has been the subject of a great deal of conjecturing.

The value of reconstructing as much as we can of proto-Chumash is apparent in this connection. To date, all studies of Hokan which included Chumash data had to rely upon material (usually poorly-recorded) from the daughter languages only, and usually from Central Chumash only. No daughter language in the family is very representative of the overall picture of proto-Chumash, and if we are to use the best data possible for wider comparisons, we will want to be able to compare

protolanguages such as proto-Pomo, proto-Yuman, and proto-Chumash. I hope that the reconstructions in this thesis will prove useful in these wider comparisons.

As a first step toward that end, I would like to give her a summary and evaluation of the earlier work which has been attempted with Chumash in relation to other California languages.

Margaret Langdon, the Comparative Hokan-Coahuiltecan Studies (1974) has presented a masterful study of the complex and sometimes difficult-to-interpret history of studies of the many languages commonly subsumed under the rubrics Hokan and Coahuiltecan. Langdon's work provides a basis for much of this chapter. I will use her insights frequently, though not always directly. However, I will examine only those works which relate directly to Chumash.

The "stage was set" (Langdon 1976, p. 13) by the classificatory model advanced by John Wesley Powell (1891). Powell's grouping were conservative in that they suggested no affiliation broader than the "family" (Langdon 1976, p. 10). In this arrangement, Chumashan was seen as a distinct family of six main dialects, no closer to any one family than to another. (See the chapter on the subgrouping of the dialects for a discussion of this.) Establishment of families, composed internally of genetically related members, was done largely on the basis of lexical comparison.<sup>1</sup>

After Powell, the main names associated with the early history of Chumash studies are Alfred L. Kroeber, Roland B. Dixon (these two often connected), and Edward Sapir. Though none of these men were specialists in Chumash, they are the only three scholars in the first half of this century to publish conclusions in this area.<sup>2</sup>

To say that these three were concerned solely with genetic linguistic relationships is misleading. In the early days of the studies of the relationships between the widely-varying languages of California, trying to bring some order into the chaos consisted as much in delineating areal relationships as genetic ones. This is especially true of the work of Dixon and Kroeber. Chumash makes its first appearance in an article by Dixon and Kroeber, "The Native Languages of California" (1903). In this, the authors are explicit about their criteria for "classification":

It must be clearly understood...that the classification that has been attempted deals only with structural resemblances, not with definite genetic relationships; that we are establishing not families but types of families.

(Dixon and Kroeber 1903, pp. 2-3)

In this case, then, the establishment of larger groupings went beyond lexical comparison: "structural

resemblances" were the guide. By this, Dixon and Kroeber meant such features as phonetics, pronominal incorporation, syntactical cases, appositions (e.g. instrumental and locative case suffixes), plural formation, and reduplication (their terms). Under this type of investigation, they assign Chumash to their "Southwestern" group.

The Southwestern group comprises Chumash and Salinan. No others can be positively assigned to it....This group must therefore be considered to consist of only two languages. Chumash may be taken as the type.

(Dixon and Kroeber 1903, p. 17)

Prominent features of the "Southwestern" or "Chumash" type included the following:

Pronominal incorporation, well-developed plural, lack of syntactical cases, use of prepositions, and a not very simple phonetic system.

(Dixon and Kroeber 1903, p. 18)

As far as this goes, it is certainly correct of Chumash except perhaps for the "well-developed plural". Chumash can form plurals by reduplication, for instance I ku 'person', pl. kuhku'; P yila 'thin', pl. yilyila'; C wot<sup>h</sup>, wo'ot 'chief', pl. wowot<sup>h</sup>wot<sup>h</sup>'; O lmon'o 'man', pl. lmon'omon'o. Ineseño also has a



pluralizing suffix -wun': /c'oyini-wun'/ 'others, other people' (Applegate 1972a, p. 230). These formations, however, are far from being the normal state of affairs; plural number in the noun is usually not marked at all. "Well-developed" implies relativity to something else. In this case, the comparison language would have to be very poorly developed as regards pluralization in order for the Chumash system to appear "well-developed".

Dixon's and Kroeber's treatment of "phonetics" is also somewhat problematic and their subgroupings are essentially value judgements based on evidence which they don't specify in detail. They use terms such as "smoothness" and "roughness", "vocalic" and "harmonious", "full, simple sounds", etc., without defining them. Phonetically, they say, Chumash falls into a Southern phonetic group (1903, p. 8) which also includes Southern California Uto-Aztecan, Yuman, Salinan, and Yokuts. These languages are, by comparison with the "rough" languages of Northern California, "soft" in phonetic character. By "rough", one can perhaps assumed that they mean the presence of glottalization of consonants, by "soft", its absence. But on this criterion alone, the heavily glottalized Chumash hardly fits into the otherwise "soft" Southern group.

In other respects, Dixon's and Kroeber's assessment of Chumash is reasonably accurate. Whatever the evidence

may have been and however subjective the analysis of it appears, the fact remains that as far as Chumash was concerned this was an important study. It first put forth the notion that Chumash and Salinan were somehow especially close to one another. Dixon and Kroeber grouped them as "typologically" similar, but the idea of "areal" as opposed to "genetic" relationship and its possible effects on the typological structure of the languages, was not made clear at this time. The mere notion of any special relationship between these two stocks started a tradition which has continued without firm resolution to this day.

The next major announcement of linguistic relationships in California occurred in 1913 in another article by Dixon and Kroeber, "New Linguistic Families in California" (1913a). In this piece the authors deal briefly with four larger stocks: Penutian, Hokan<sup>2</sup>, Iskoman, and Ritwan, as they called them. These stocks they have formed by combining certain smaller stocks in California. Penutian, Hokan, and Ritwan need not concern us here. But Iskoman is of interest since according to Dixon and Kroeber, it is a stock in which the members, Chumash and Salinan, are probably genetically related.

An apparent structural similarity of Chumash and Salinan was long ago noted by the authors, but as in the case of Yuork and Wiyot, lexical resemblances, while occurring, are to date not conspicuous.

A presumption favorable to the relationship may however be properly entertained on the basis of existing knowledge.

(Dixon and Kroeber 1913, p. 652)

The authors qualify themselves somewhat. After giving a list of twelve items presumed to be Chumash-Salinan cognates, they posit a relationship between Iskoman and Hokan, but say:

It is however idle to discuss further a possible relationship between Iskoman and Hokan, when the genetic connections between the members of Iskoman is scarcely yet a matter of demonstrable proof, probable though it may seem.

(Dixon and Kroeber 1913, p. 653)

Wisdom, I think, rather than excessive caution, may have been the basis for that statement.

Something has happened between 1903 and 1913 that leads Dixon and Kroeber to believe that the structural similarities of the Southwestern type languages in fact imply a genetic relationship. Partly, I believe, it was the spirit of the age in which they worked, and part of a more widespread attempt to find some principles for ordering the variety of languages which California presented to the observer. Other American Indian language families were responding well

to comparison; why not those of California as well? With regard to Chumash in particular, two articles in the period between 1903 and 1913 are important in determining how the shift in emphasis (from typological or areal to genetic classification) came about.

The first, published in June, 1904, is Kroeber's sketch of Ineseño Chumash (in Kroeber 1904). At the end of this is a short statement concerning "The Relationship of Chumash and Salinan". The author gives a short comparative list (eight items) in Chumash and Salinan, many of which also occur in the 1913 list. He also gives a list of structural items, very similar to the 1903 list which delineated the Southwestern type languages. The two lexical lists, of 1904 and 1913, are given in the chart on the next page.

All in all none of these forms seems very convincing evidence for positing a genetic relationship between Chumash and Salinan. The 1913 evidence is not much better than that of 1904, and certainly does not demonstrate regular phonological correspondences. The 1904 words cited for "work" were quite properly thrown out of the 1913 list because their origin in Spanish trabajar was recognized. Why "younger brother" and "older sister" not longer appear is a mystery, as they seem to be among the better sets cited in 1904. In addition, "arm" is intriguing: the Chumash form which is the same in all dialects is morphologically simple. The



Salinan form appears to be complex, but no indication is given that the -po- in fact corresponds to Chumash -pu. The word for "dog" is suspect given its wide distribution over much of California in a similar phonetic form and its suspected origin in Spanish as well: cf. Central Pomo chu'-chu; Esselen hu'-tcu-mas, for example (Bright 1960, p. 231). A commentary on the numerals is given at the end of the chapter on areal relationships. As to the remainder of the forms cited, it is impossible to say more than that they constitute a very impressionistic attempt at comparison, one which would never hold up under the rigorous standards of application usually associated with the comparative method. On very little more evidence than they had in 1903 and 1904, Dixon and Kroeber in 1913 posited genetic relationship between Chumash and Salinan. More than anything, their interpretation and not their facts have changed in the intervening ten years.

Kroeber by himself made one other important contribution to Chumash studies during this period. In 1910 he published a pamphlet called "The Chumash and Costanoan Languages". In this, as noted in the chapter on the subgrouping of the dialects, he provided a brief internal comparison and subgrouping of the Chumash family. He makes one statement relative to wider Chumash affinities. This is the remark to the

effect that "The Salinan language, to which the San Luis Obispo dialect was adjacent...[is] so far as known unrelated" (Kroeber 1910, p. 268). By this statement we can narrow down the time in which the change of opinion about the relative status of the two language families took place. In 1910 Kroeber (and presumably Dixon by association) would still not posit a genetic relationship. By 1913, they did suggest such a relationship.

The final piece of Dixon's and Kroeber's which I will consider here is their lengthy "Linguistic Families of California" (1919). In this they reaffirm very strongly the genetic affinity of Chumash and Salinan (Iskoman) and go even further.<sup>3</sup>

From the first it was apparent that Chumash and Salinan possessed more numerous similarities with each other than either possessed with any other language. In their second preliminary notice the authors accordingly set up an "Iskoman" group or family. Some of the data seemed to "lend themselves to the hypothesis of a connection between Hokan and Iskoman", although discussion of such a possible relationship appeared premature then.

Subsequently, however, Mr. J.P. Harrington expressed his conviction of the kinship of Chumash and Yuman, and thereby implicitly of Iskoman and Hokan, if these groups were valid. And in his Yana paper Dr. Sapir treats Chumash and Salinan

outright as if they were Hokan, and with results substantially equal to his results from the other languages of the group.

The tentative Iskoman group may therefore be regarded as superseded and merged into Hokan.

(Dixon and Kroeber 1919, p. 104)

The first major paper of Edward Sapir's which concerns us here is the one cited above, "The Position of Yana in the Hokan Stock" (1917). In this, Sapir includes Chumash (and Salinan) as members of the Hokan group, though he says:

Chumash and Salinan are at present of more doubtful inclusion than the others. I hope, however, to have helped to dispel this doubt by data presented in the course of the following pages.

(Sapir 1917, pp. 1-2)

Sapir's "doubtful inclusion" probably reflected the somewhat cautious statements of Dixon and Kroeber. The first thing to be said of Sapir's study is that the Chumash data are much sparser than that for most of the languages he includes (despite Kroeber's and Dixon's statement about "substantially equal results") and turn up in relatively few sets (only 16 out of 141 sets of "Radical Elements", for



instance). This is certainly at least partially due to the limited amount of material he had available. Sapir's data which he brings to bear on the problem facing him is still impressive in sheer amount. To this day nothing comparable has been done, except by Sapir himself, and the work deserves more attention than it has received. I have given below a few examples of the types of comparison Sapir made. I have shown only the consonants which he was comparing in the given sets.<sup>4</sup>

	#6	#16	#137
	"sky"	"tongue"	"blood"
KAROK		-p-r-	-x
SHASTA-		()-n-	-x-t
ACHOMAWI-		p-l	-x-d
ATSUGEWI			
CHIMARIKO		-p-n-	s-tr-, s-dr-
YANA	-p'-	b-l-	w-t'd-
POMO		(-)b-l	h-t-
ESSELEN	-m-		
SALINAN	-m	p-L	-k-t-
CHUMASH	-p-	()-l-	-x-l-
YUMAN	-m-	-p-ly-	-hw-t-, -xw-t
SERI	-m-	-p-L	-v-t
CHONTAL	-m-	-p-L	-w-s

Sapir's data, though intriguing, are not convincing enough to allow acceptance of Chumash as a full member of the Hokan stock as he posited. The work itself in regard to Chumash lacks the rigor which Sapir is certainly capable of. Again, the desire to make sense of so much diversity appears to have been more important than rigorous comparison.

Despite the problems associated with the data, Sapir was convinced that Chumash should be genetically grouped with certain other languages in California into Hokan. This view is carried over into the final article which I will consider here. This is "The Hokan Affinity of Subtiaba in Nicaragua" (1925). With Chumash "firmly" established as a member of what he called the Hokan-Coahuiltecan family, Sapir freely quotes Chumash data in support of arguments and is confident enough to make statements such as, "It is highly probably that a detailed comparison with such Hokan-Coahuiltecan languages as Seri, Yuman, Chumash, and Tonkawa would disclose a great many additional Hokan cognates in Subtiaba" (p. 405). In this two-part article Sapir discusses a number of phonological processes which he attributes to proto-Hokan. Many of the changes he suggests merit further investigation with respect to Chumash, but again, the reader is given the overall impression that Chumash fits only marginally into the picture of Hokan

as Sapir draws it.

In the cases of all three of the scholars we have looked at, a feeling of hopefulness pervades their work. They were faced with a large task, that of sorting out California languages into manageable units. As shown, their claims were often extravagant, but one also gets the impression that they knew that their comparisons were not as rigorous as they might desire. The main purpose behind advancing the classification so quickly was to put forth a framework which could be disputed or justified by further work. In this sense, their contributions are invaluable. Further, there is the sense in their work that their suppositions and hypotheses would hold up under later investigation.

If the amount of evidence cited were the only thing that mattered in answering the Chumash and Hokan question, we might well agree with Kroeber, Dixon, and Sapir and answer "yes" to the question of whether Chumash were Hokan. But the other other questions we must ask about the validity of some of the evidence don't permit this at the present time. Taking the information we have now (and for virtually every language on the Hokan list we have more now than Dixon, Kroeber, and Sapir did) all scholars working in any of these languages must continue to discern what they can about what "Hokan" means genetically. In the past several

years, numerous comparisons of which I am aware have been tried along these lines (Haas 1962, 1963; Silver; Bauman; Guilfooy (personal communication)) with no entirely satisfying results. However, some small advances have been made, especially in terms of the validity of types of comparisons used, and the conclusions of some of these investigations are worth noting.

In "Shasta and Proto-Hokan" (1963) Mary R. Haas presented nine cognate sets which listed data from numerous Hokan languages. Chumash was included in five of these sets: ear, navel, nails (claws), tongue, and sleep. Haas concludes that "Chumash appears in Tables 1, 3, 6, 8, and 9, but in every instance appears to stand apart from other Hokan languages". (p. 57) She goes on to express the opinion that relating Chumash closely to any other group (such as Salinan) is not a particularly good idea at the time.<sup>5</sup>

In the past several years, information on the nature of proto-languages for the other families of languages in California has become available. In particular, the data for proto-Pomo have been available for comparison (McClendon 1973). Both Chumashan and Pomoan languages are characterized by frequent use of instrumental prefixes and various other kinds of affixes. The following chart shows some of these affixes and one lexical item as they

occur in Chumash and proto-Pomo (McClendon 1973).

Proto-Pomo	Chumash
*p <sup>h</sup> u- 'with energy of a moving current of air as medium or locus'	pil(i)- (B) 'movement in atmosphere'
*da- 'with or affecting the hand'	*tVl- 'with or affecting the hand' (O <u>tol-</u> , I <u>tal-</u> )
*di- 'by natural or unseen forces, e.g. gravity, motor activity, mental activity'	ti- (B) 'with, through, by -- what follows'
*p <sup>h</sup> i 'from motion which cleaves/divides by piercing, generally to separate'	(s)peleqe (O) 'to crack, split off' (from PCh <u>*eqe</u> plus prefix)
*k <sup>h</sup> ow 'negative'	kî-nî (O) 'prohibitive' (negative imperative)
*-lal 'directional'	*lhVl 'directional' (O <u>-lhV</u> ; B <u>-lil'</u> )
*-aya 'plural number'	*(')iy- 'plural number'
*-w 'locative'	*-mu 'locative'
*'ahxá 'mouth'	*aq- 'with or affecting the mouth'
*q <sup>h</sup> a'bé 'rock'	*qVpV 'rock'

The above is a partial listing of such forms which I have assembled, but shows a range of correspondences. A listing of these reveals some interesting patterns.

## Proto-Pomo

## Chumash

---

*p <sup>h</sup> -	p- (*p-)
*k <sup>h</sup> -	k- (*k-)
*q <sup>h</sup> -	*q-
*b-	*p-
*d-	*t-
*x̣ (*hx̣ ?)	*q-
*l-, *-l	*l-, *-l
*-y-	*-y-
*-w	*-m-

---

These sets appear to demonstrate some systematic correspondences, and correspondences which are generally conservative. (As pointed out by Silver, personal communication, shifts in manner rather than position appear to be the rule in Northern Hoka languages.) We see here manner, rather than position, shifts, with the possible exception of the last one, PP \*-w, PCh \*-m-. The cognate sets I have assembled so far also tend to justify the reconstruction of proto-Chumash without aspirated phonemes.

To date, the best results in wide comparisons have come by using data from proto-languages and from family groups and examining in particular affixes rather than stems or compound formations.

It is true that, as Haas says, Chumash continues to stand apart from other languages in the state in substantial ways. I would like to suggest that the Chumash family be considered as an isolate family and not to be grouped closely with any other particular family or language. There is enough evidence compiled over the years to suggest that at some level it is related to some of the so-called Hokan languages. That relationship is not simple or straightforward. The time depth for the direct connection between Chumash and any other language or group of languages is very deep. Comparisons such as Haas's and my own should be considered preliminary but encouraging.

In dealing with the problem in the future, the immediate direction is clear. A full-scale areal survey is needed in order to eliminate from consideration those features which have diffused across larger or smaller geographical areas, and which have come into languages from other languages. In the case, for instance, of Chumash, features which have been borrowed from other Hokan languages could tend to obscure sound shifts. Work on the genetic relationships of Chumash cannot wait until the areal study is complete, though.

We need as much proto-Chumash material as possible, as well as comparable material from other languages and language families. This implies the need for further internal reconstruction as well as comparative work, particularly in those cases where we must deal with languages (such as Karok) rather than language families. (See Haas 1963, p. 55)

Chumash may continue to be somewhat problematic in the general area of California linguistics. But we are in a far better position now than ever before to evaluate and use older work and to incorporate new information into the task of finding out just where Chumash does belong in relation to Hokan.



## AREAL RELATIONSHIPS

The mainland Chumash, in historical times, lived in a relatively small geographical area. On the west and southwest, they were bounded by ocean, but on each of the other three sides of their territory they were neighbors to Indians who were speakers of languages quite unlike their own. To the north, their neighbors were the Salinans, specifically the southern Salinans, or Migueleños. Of Chumash groups, only the Obispeño are known to have been in geographical contiguity with Salinan speakers. To the east, the main group touching the Chumash were the Yokuts, most particularly those of the Buena Vista group. To the southeast, the Chumash were neighbors of several Uto-Aztecan groups, Kitanemuk and Gabrielino among them. Thus, Chumash speakers were in regular and intensive contact with speakers of three very different major linguistic stocks: Hokan (Salinan), Penutian (Yokuts), and Uto-Aztecan (Kitanemuk, Gabrielino, etc.). The results of this contact can be seen or inferred on the basis of certain features in the corpus of Chumash data.

The most profitable results in this area for Chumash to date have been those obtained by lexical inspection, and that is what I offer in this chapter. I will begin by comparing forms in Northern Chumash with forms in Southern California Uto-Aztecan, adding Salinan where the forms are available and appropriate.<sup>1</sup>

- |    |                           |                                     |
|----|---------------------------|-------------------------------------|
| 1. | 0                         | p̄ini 'to see' (qi-p̄ini 'look at') |
|    | Sal <sub>a</sub>          | (p)ein̄ax 'to see'                  |
|    | PN                        | *pu(')ni 'to see'                   |
|    | Southern Numic            | *p̄ini 'to see'                     |
| 2. | 0                         | sumo, šumo, sumu, šumu              |
|    | PUA                       | *seme                               |
|    | Mono                      | symy                                |
| 3. | 0                         | 'uwa' 'to cry'                      |
|    |                           | suwa' 'child' (lit. 'it cries')     |
|    | PN                        | *u/o(ŋ)a 'baby, infant'             |
|    | Western Mono<br>(Nichols) | owaa-                               |
|    | Panamint                  | owaa-                               |
|    | Kawaiisu                  | uwa                                 |

Other Chumash dialects have different words for 'cry';  
cf. Central Chumash miš; Salinan<sub>a</sub> 'šmes, Salinan<sub>m</sub>



7. O ti-ni 'fire'  
 C ne 'fire'  
 B ni 'fire'  
 PN \*kuna 'fire, firewood'
- Western and  
 Central Numic;  
 Kawaiisu kuna 'fire, firewood'
- PUA \*na, \*nai 'burn'
- Mono nai  
 Luiseño ná'
8. I tem' 'foot'  
 B t'em' 'sole of foot'  
 V tem' 'foot'  
 O teme' 'foot'  
 PUA \*tem
- Miller's PUA reconstruction is based only upon  
 Papago and Mayo forms. Cf. Mono tah-peta 'sole of foot'.
9. I step 'flea'  
 B step 'flea'  
 V ctep 'flea'  
 PUA \*tepu, \*tepuci 'flea'
10. I ti 'name'  
 B ti 'name'

- |     |                   |                               |
|-----|-------------------|-------------------------------|
| I   | t̥i               | 'name'                        |
| C   | te                | 'name'                        |
| PUA | *te, *tew         | 'name'                        |
| PN  | *ty(")wa          | 'name'                        |
|     |                   |                               |
| 11. | Proto-Chumash     | *tVkem' 'mountain lion'       |
|     | B                 | tuk'em'                       |
|     | O                 | tet <sup>y</sup> e, tekš'e    |
|     | PUA               | *tuku 'wildcat'               |
|     | Panamint          | tukkubicci; tukkumææci 'lion' |
|     | PN                | *tu'ku 'wildcat'              |
|     | Northern Paiute   | tuhu                          |
|     | Central, Southern |                               |
|     | Numic             | tu'ku                         |
|     |                   |                               |
| 12. | O                 | 'im̥i 'body'                  |
|     | Central Chumash   | 'am̥in' 'body'                |
|     | PN                | *ama 'body, ribs'             |
|     | Northern Paiute   | ama 'body, ribs'              |
|     | Mono              | awa-wono 'ribs'               |
|     |                   |                               |
| 13. | O                 | paš̥i 'vomit'                 |
|     | Central Chumash   | paš̥ 'vomit'                  |
|     | PUA               | *pis 'vomit'                  |
|     | Serrano           | piis̥                         |

14. O                    mit<sup>y</sup>i, mikš̥i 'far'  
       Central Chumash    mik 'be far'  
       C                    mikič 'far'  
       PUA                  \*meka 'far'
15. O                    ham'a, hana 'aunt'  
       B                    xaw'a 'aunt (female speaking)'  
       I                    hawa' 'maternal aunt'  
       Northern Paiute  
           (Nichols)        -hama'-a  
       Mono                hahma' 'older sister'
16. I                    xan'aya 'chin'  
       B                    xanax'an 'jaw; chin, lower  
                                   part of face'  
       PN                    \*kana- 'chin'  
       Mono                qana 'beard'
17. I                    pepe 'elder sibling  
       PUA                  \*pa 'older brother'  
       Mono                papi 'older brother'  
       Salinan<sub>a</sub>            pe' 'elder sister'  
       Salinan<sub>m</sub>            pape' 'elder sister'

The sets given above, and a number of others which could be cited, demonstrate a high degree of linguistic interaction between Uto-Aztecan and Chumash groups. These groups are often widely-separated, as in the case of Obispeño and any Uto-Aztecan group. Outside evidence is available that the Yokuts groups are not of long-standing in the southern San Joaquin Valley, but have moved there from the north (Gamble, personal communication). In addition, it is thought that the Uto-Aztecan groups in the Great Basin spread out from a point in Southern California or Southwestern Arizona at a time depth which is not too great (Nichols, personal communication). It is possible to a situation in which the so-called Hokan languages (including Chumash and Salinan), which now occupy the areas peripheral to Penutian (Yokuts) and Uto-Aztecan groups, occupied a much larger portion of Southern California. They would first have been pushed apart by an expansion of the Southern California Uto-Aztecan groups (who occupied at least part of the lower San Joaquin Valley then, and were in contact with the Chumash, including the Northern Chumash). Later, the southward Yokuts movement split the Uto-Aztecan and Hokan groups apart. Some of the groups, then, that could at one time have been in direct contact with the Uto-Aztecan were the ancestors of the Chumash.

This hypothesis would explain why Obispeño shows so many loanwords from Uto-Aztecan languages, loanwords not shared by other of the Chumash dialects to the south, with whom Uto-Aztecs had direct contact in historical times. If all of these migrations happened within a fairly short period of time (a couple of hundred years perhaps) the resulting linguistic upheaval would be tremendous.

A firm date cannot be set for this chronology. However, since for many of the forms which we can compare with Uto-Aztecan forms we can reconstruct a proto-Chumash form, the contact must be old. It is not always clear which direction the borrowing went; some of the forms compared may represent borrowings from Chumash into Uto-Aztecs. Forms for which we can both reconstruct proto-Chumash forms and compare them to Uto-Aztecan ones include: FIRE, FOOT, NAME, MOUNTAIN LION, BODY, VOMIT, FAR.

Concerning the relationship between Chumash and Salinan, a search of the lexicons of Obispeño and Salinan has revealed very little of a substantive nature. Only one set of forms which compare well has been found.

18. Sal <sub>a</sub>	kaiyáma	'white clam shells'
0	kuyama, quyama	'white clams'



I

kuyam 'big white crab sp.'

The direction of borrowing is not certain, but I believe it was from Chumash into Salinan; namely, from Obispeño into Salinan. All mainland Chumash dialects have the form, and if it were borrowed from Salinan, it would have to have diffused throughout the family, with semantic shifts.

Kroeber (1910) indicated that he found some similarities between Obispeño and Salinan. However, my preliminary examination makes it appear that Chumash and Salinan had relatively little interaction despite geographical proximity in historical times.

I now turn to sets of shared forms where three stocks (Yokuts, Uto-Aztecan, and Chumash) are represented.

19.	0	pasini	'ocean, sea'
		Pan-Yokuts (Gamble)	pa'asi 'lake'
		PN	*pa-(i), *paja 'water'
		Kawaiisu	po(°)o
		Mono	pa

(cf. Central Chumash 'o' 'water', Northern Chumash to' 'water', Island Chumash mihi 'water'.)

20. O	tpítì	'acorn'
B	šipitiš	'acorn mush'
Yokuts (Gamble)	putus	'acorn'
Sal <sub>m</sub>	t i'pi	'acorn'
PUA	*tepa	'pine nut'

In we are dealing with one set, then we must deal with a metathesis. If a Uto-Aztecan language was the source, then the Yokuts forms shows a metathesis which was passed on into the Chumash form. The Salinan form, with no metathesis, would then argue for an old contact between that group and some Uto-Aztecan group (see above). The basic meaning of the form is "vegetable food source", and the specific item depends on the culture.

There are numerous sets which show shared forms between Yokuts and Chumash. The following are a sampling.

21. Pan-Chumash	tu'	'ear'
Yokuts (Gamble)	tuk	'ear'

Mary Haas has noted that similar forms have been noted in many Penutian languages of California, including Costanoan, Miwok, and Wintu. (Haas 1964, p. 85)

- |     |               |        |                              |
|-----|---------------|--------|------------------------------|
| 22. | B             | talip  | 'sinew-backed bow'           |
|     | Yokuts        | dalip  | 'bow'                        |
| 23. | Proto-Chumash | *kuni' | 'rabbit'                     |
|     | Xometwoli     | gun'a  | 'cottontail'                 |
|     | Tulamni       | kun'a  | 'conejo grande' (Harrington) |

There are several people who have suggested the possibility that this was a borrowing from Spanish conejo (Mary Haas, Dan Melia). The Obispeño form t<sup>y</sup>uni' would argue against this, however. The change of proto-Chumash \*/k/ to Obispeño /t<sup>y</sup>/ took place well before Spanish contact. The Obispeño would have borrowed conejo as /qun-/ or /kun-/.

The next sets are designed to show the relationship between the two subdialects of Chumash called Emigdiano (Barbareño) and Alliklik (Ventureño). These two, collectively known as Interior Chumash, were spoken at the periphery of Chumash territory, at the linguistic boundaries between Yokuts (in the case of Emigdiano) and Shoshonean (Alliklik). In the case of the Emigdiano in particular, the territory they occupied in and around Rancho San Emigdio was a traditional meeting place for all the Indians of the area for trade and dances. The Emigdiano Chumash were not of long-standing as occupants of the San Joaquin

Valley . Their origin there can be traced to a mission uprising on the coast in the 1800's (see Beeler and Klar 1977).

The data below come from the word lists of C. Hart Merriam which have been described in detail by Beeler and Klar (1977).

- |     |                    |                             |                           |
|-----|--------------------|-----------------------------|---------------------------|
| 24. | Emigdiano          | ko-che-let <sup>2</sup> tah | 'valley oak'              |
|     | Tulamni Yokuts     | k'učilet'(a)                | Harrington 'valley oak'   |
| 25. | Emigdiano          | cho-hōk                     | 'sycamore'                |
|     | Hometwoli Yokuts   | tcoxok                      | 'tree' (Kroeber)          |
| 26. | Emigdiano          | tap <sup>2</sup> tap        | 'leaf'                    |
|     | Buena Vista Yokuts | dapdap                      | 'leaf'                    |
| 27. | Emigdiano          | lap <sup>2</sup> 'p         | 'cottonwood'              |
|     | Buena Vista Yokuts | lap                         | (Harrington) 'cottonwood' |
| 28. | Emigdiano          | tu-wuh <sup>2</sup> kan     | 'root'                    |
|     | Buena Vista Yokuts | t'iwexan                    | (Harrington) 'root'       |
| 29. | Emigdiano          | u <sup>2</sup> san          | 'acorn'                   |
|     | General Yokuts     | öcin                        | 'acorn' (Kroeber)         |



36. Alliklik                      ah-ko<sup>z</sup>tso 'bark'  
       Kitanemuk                    ah-ko<sup>z</sup>tso 'bark' (Merriam)

In the above examples, no other Chumash dialect has the Yokuts or Uto-Aztecan forms; the direction of borrowings in these cases are thus clear.

The last problem I wish to consider is that of the Northern Chumash numerals, especially those from one to ten. The first ten numerals in Central, Northern and Island Chumash are listed below.

	Central (Barbareño)	Northern	Island
1	pak'a	sumo, šumo, sumu, šumu	'ismala
2	'iškôm'	'est <sup>y</sup> u'	'iščom
3	masix	mišì'	masìx
4	skum'u	paksi	skumu
5	yitipak'a	tiy'eni, tiyeni	(na)syetisma
6	yitiškôm'	ksuw'ast <sup>y</sup> u	(na)syetiščom
7	yitimasix	ksuwasnišì	(na)syetmasìx
8	malawa	skom'o, skomo	malawa
9	spa'	(no form recorded by Harrington)	spa'a, cpa
10	k'eleškôm'	tut <sup>y</sup> imli	kaškom

The number systems of the three groups show basic similarities. They are all quaternary in nature; that is, a system of counting by fours. Thus, the roots for 'two' and 'three' (and 'six' and 'seven' therefore) are clearly related. But there are some differences as well. Island<sup>and</sup>/Northern Chumash forms for 'one' are aberrant, as are the Northern forms for 'five' and 'ten'. Northern 'four' and 'eight' appear to correspond to Central and (in the case of the latter) Island 'one' and 'four', respectively.

Several of these problems can be solved by comparing the troublesome Chumash forms to items from non-Chumashan languages.

The source of Northern Chumash *sumo*, *šumo*, *sumu*, and *šumu* (all of which are attested in Harrington's notes) is related to various Uto-Aztecan forms for 'one'. Wick Miller (1967, p. 68) gives \**seme* as the proto-Uto-Aztecan form for 'one'. Lamb gives *symy* as the Mono form. The establishment of the source language for this form (i.e. non-Chumashan) also helps in understanding the apparent displacement of the numerals 'four' and 'eight' in Northern Chumash. After the introduction of the Uto-Aztecan form for 'one' into Obispeño, the system itself remained intact, but was reshaped. Base four counting was preserved by pushing the original words for 'one' and 'four'

represented by Obispeño *paksi* and *skom'o/skomo*, into the 'four' and 'eight' positions. If Obispeño originally had a form like Central and Island *malawa*, it has not been retained in the system.

The source of Northern Chumash *tiyen'i/tiyeni* 'five' is not so easy to determine. It can be compared to Yokuts forms for five and ten.

Hometwoli	<i>yitsinaḷ</i>	'five'
Hometwoli	<i>ṭiyaw</i>	'ten'
Tulamni	<i>yitsin</i>	'five'
Tulamni	<i>ṭeu</i> (Gamble <i>ṭew</i> )	'ten'
Tachi	<i>'icini'</i> , <i>yic'inil</i>	'five'
Tachi	<i>t'ey'ew</i> , <i>t'eyew'</i>	'ten'

Neither the Yokuts forms for 'five' or 'ten' appear at first to compare well with the Chumash forms.

However, early recorders of Chumash recorded forms like *tiyehui* (Coulter 1983) and *Tiyeoui* (Duflot de Mofras 1842). These forms, without an *-n-*, very closely resemble the Yokuts forms for 'ten'. I would like to suggest this as the source of the borrowing.<sup>2</sup>

The source of Obispeño 'ten' is still a mystery, as is the source of Island Chumash *'ismala* 'one'. However, it is hoped that further knowledge of non-Chumashan languages will someday provide sources for them.



The Northern Chumash system as we have it represents several outside linguistic influences and sums up the situation with regard to contact between this group and its non-Chumashan neighbors. If the data given in the preceding pages and the study of Northern Chumash numerals are any indication, the process of discovering what the areal prehistory of the Chumash was is going to be one of the most exciting research areas of the future. At this point, the subject has barely been touched, and not until the efforts of those working on all the languages of the area have been coordinated will a complete picture emerge.

## NOTES

Introduction

<sup>1</sup>Shoshonean and Southern California Shoshonean are the terms used by Kroeber to designate the Southern California members of the Uto-Aztecan group. I will use Uto-Aztecan throughout this thesis.

Correspondences and Reconstructions I

<sup>1</sup>The symbols used for consonants and vowels and the spelling of dialect names represent an orthography agreed upon by those currently working on Chumash linguistics: M.S. Beeler, R.B. Applegate, and K.A. Klar.

Correspondences and Reconstructions III

<sup>1</sup>All Chumash dialects known had an 'impersonal' or 'indefinite' prefix in the verbal paradigm.

I s-am-  
 B s-am-  
 O -am- (from -ham-)  
 C -am-

I /s-am-sin'ay/ 'they store it; it is stored'  
 (= 'someone stores it')

The Chumash dialects also have relative forms of the impersonal forms.

I ma-l-am  
 O (ya-)lham from (ya-)l-ham-

O ya-lhamqto' 'someone takes care' or 'one who takes care'

These are formed of the definite article, a relativizer, plus an impersonal prefixed pronoun.

<sup>2</sup>The Barbareño article -l- is unlike the definite article in any other dialect. Its position relative to the noun is more like that of a possessive prefix than a particle. In all other dialects the definite article appears to correspond morphologically and syntactically to the particle class. The Barbareño situation is best regarded as an independent development in that dialect, and it is interesting to speculate that the

Barbareño definite article may be related to the nominalizing prefix(es). For purpose of this discussion, the Barbareño can be put aside. Data from other dialects will be used.

<sup>3</sup>The forms in Central Chumash are very regular, and in fact, are identical with the verbal markers (except for the indefinite particle, see note 1). Such is not entirely the case in the Island dialects. Here, the verbal inflectional morphemes are, for the dual and plural numbers, identical, but vary slightly in the singular. Thus, Island Chumash has:

S1	m-
S2	p-
S3	∅, ala-

#### Chumash and Hokan

<sup>1</sup>For a discussion of this, see Haas 1969a.

<sup>2</sup>Dixon and Kroeber though at the time that Hokan consisted of Karok, Chimariko, Shasta, Pomo, Yana, Esselen, and Yuman.

<sup>3</sup>In 1954 Madison Beeler began work on Barbareño Chumash. After this date, more Chumash data began appearing in print, particularly on this dialect and on Ventureño (Beeler 1964, 1967, 1970, 1976). None of it, however, related directly to connections within or beyond the Chumash family itself.

C. Hart Merriam collected a certain amount of Chumash data as well, but in his lifetime he did not publish them. His word lists of Alliklik and Emigdiano have proven recently to be the only major source of information on Interior Chumash dialects (see Beeler and Klar 1977). Merriam is also not known to have worked on the wider relationships of Chumash.

John P. Harrington did hold opinions on what some of the genetic affiliates of Chumash were (harrington 1913, 1917). His name is not a prominent one in the area, though, as he did little in print but state his opinion that Chumash was related genetically to Yuman (1913) and Washo (191917). No data was presented supporting either conclusion.

Harrington's opinions about wider Chumash relationships, transmitted privately to Kroeber, were perhaps influential in this change of attitude between 1904 and 1913. They certainly colored the even stronger acceptance of it by 1919, as shown by Kroeber's own words.

<sup>4</sup>These examples reflect Sapir's data by my interpretation in deciding which segments he meant to compare.

<sup>5</sup>Haas also included Chumash data in her article "California Hokan" (1962). In Tables 2 and 6 she shows that some of the cognate sets for Hokan can be set beside similar sets for Penutian with sobering results. Her conclusions here as regards Chumash, however, are superceded by those in "Shasta and Proto-Hokan" (1963).

### Areal Relationships

<sup>1</sup>The abbreviations used here for Chumash dialects are those used elsewhere throughout the thesis. Other abbreviations are as follow:

Sal <sub>a</sub>	Salinan-Antoniano dialect
Sal <sub>m</sub>	Salinan-Miguelero dialect
PUA	Proto-Uto-Aztecan
PN	Proto-Numic

Yokuts dialect names, Mono (Uto-Aztecan) and other dialects are spelled out.

The sources of information are the following:

For Salinan (both Sal<sub>a</sub> and Sal<sub>m</sub>) I have used Mason 1918.

For PUA, as well as for other Uto-Aztecan dialects not otherwise marked, I have used Miller 1967.

For PN, and for dialects marked (Nichols), Michael Nichols has been generous in supplying me with forms.

For Mono, I have used Lamb's unpublished Mono Dictionary.

Forms taken from Kroeber's and Harrington's work are so marked.

Forms marked (Gamble) were supplied to me by Geoffery Gamble.

<sup>2</sup>A fuller treatment of the Obispeño numerals will appear in American Indian and Indo-European Studies: Papers in Honor of Madison S. Beeler to be published by Mouton, 1978.

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