

A RESEARCH PROGRAM
FOR RECONSTRUCTING PROTO-HOKAN:
FIRST GROPINGS

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1. **Background.**

What follows is a report on some of the results of a study I started in 1987 with the aim of reconstructing all feasible aspects of proto-Hokan structure. The work is still very much 'in progress', but I believe the proposed reconstruction of consonants, phonotactics, and word structure to be viable. The reconstruction of vowels is quite likely subject to simplification. The suggested reconstructions of individual morphemes are for the most part tentative, and many of them will undergo changes in detail, especially in their syllabics.

1.1. **Purpose.** My interest in comparative Hokan bloomed in the Winter of 1987. Greenberg 1987 (Language in the Americas, LIA) follows Sapir in placing Tlapaneco-Sutiaba [sic: my spelling] (henceforth T-S) in Hokan (henceforth Hok), while Rensch 1974 showed that T-S is Otomanguean. Through my own work on comparative OM I know Rensch to be right on this matter. OM reconstructed without T-S accommodates and accounts for T-S nicely without serious adjustment. Thus T-S is a member of the OM stock. I decided to examine Sapir's evidence for relating T-S to Hokan. Either Sapir was wrong, or pOM and pHok have a common ancestor (or else OM is Hokan). Eventually I read every bit of published comparative work on Hokan, and a good deal of unpublished work. I xeroxed, clipped, and taped every proposed Hokan etymology to a 5x8" file card. In the process I became convinced that Hokan is a valid genetic group, though certain of the languages assigned to Hokan by one or another writer do not seem to me to

belong in the group, judging from available evidence. Also many of the proposed Hokan etymologies seem unconvincing, and/or contain some data that seems not to belong. If Hokan is a demonstrable genetic group, it will be possible to either

(a) reconstruct the ancestral proto-language, and trace the diversification of the family, or

(b) show recurrent phonological equations (not all identities) in basic vocabulary, establish several hundred etymologies, show recurrent grammatical patterns involving phonologically cognate morphemes, and show that all these etymologies and grammatical patterns are sufficient to distinguish Hokan from any potential cousins. (b) is an incomplete subset of (a).

I have decided to approach the problem as if Hokan were a stock like Indo-European, made up of a set of families (like Germanic, Baltic, Slavic, Indic, Iranian, Romance, Celtic) and isolates (like Albanian, Armenian), and perhaps some intermediate groupings (like IndoIranian, BaltoSlavic, Italic). Hokan, if a valid stock, has enough branches to make the triangulation back to the proto-language seem feasible. Unfortunately most of the branches seem to consist of isolates or language areas (a technical term I use to refer to a set of two or three barely different languages) rather than families. We all know that to reconstruct proto-IE as we know it solely on the basis of currently spoken languages would have been impossible, though a pretty good approximation could be made. Reconstructing proto-Hokan, however, is like reconstructing pIE using just German, Rumanian, Greek, Iranian, Romani, Armenian, Albanian, Latvian, and Slavic. I approach comparative Hokan as though the ancestor could in fact be reconstructed. I may have to retreat from this position, but we can not in any case reach the higher goal without trying for it.

Whether or not Hokan and OM are related is something to be looked into after (p)Hok has been adequately characterized, although I believe the hypothesis that they are genetically related in a non-trivial sense is quite promising.

I feel reasonably optimistic about this effort because I found the apparently quite opaque comparative OM situation to yield to certain kinds of analysis and certain kinds of heuristics. Hokan may well have more time depth than OM, but one notable thing that happens as the history of a language family becomes better understood is that the probable time depth often seems to get shallower. That is, we recognize more cognate structures, and therefore become convinced of the relationship and suppose the time depth to be shallower than we had previously believed.

1.2. Assumptions. Although I have co-authored a book on the effects of language contact (Thomason & Kaufman 1988) wherein we establish that mixed and denatured languages do in fact exist, one does not assume that similarities in basic vocabulary between sets of languages are due either to genetic relationship or to contact unless a reasonable account of why either of these things should be so can be given. The presence of widespread lexical similarity in basic vocabulary may be due to

creolization, language mixture, or genetic relationship. The genetic hypothesis cannot be discarded until it has been tested, and I mean adequately tested. If, as I suppose, there is a linguistic stock to be called Hokan, and another stock to be called Penutian, it is possible that the two stocks have in turn a common ancestor. Resemblances in basic vocabulary between Hokan and Penutian languages could therefore in some cases be due to common inheritance. Though they could not be used to **demonstrate** the reality of the Hokan stock, once Hokan is established **on the basis of other data**, they can be used in the elaboration of a model of proto-Hokan phonology and lexicon.

1.3. **Acknowledgements.** Various scholars have helped me in my quest for comparative Hokan data and ideas, for which I am grateful. I was able to consult with Bob Oswalt, Leanne Hinton, and Margaret Langdon at various times during the Winter and Spring of 1987. Bob Oswalt gave me copies of much of his comparative Pomo material. Bob Oswalt, Ken Whistler, and Howard Berman have all shared with me their judgements about what languages belong in Hokan. Margaret Langdon gave me access to the Hokan Language Archive of the Linguistics department at UC San Diego, and the Harrington Chimariko data archived there, as well as a sketch of Chimariko phonology by George Grekoff, were most valuable. Kathy Turner has let me look through her lexical files based on Harrington's Salina data. Judy Grey Crawford gave me permission to copy her MA thesis on Pomo, Yuman, and Hokan generally. Bill Jacobsen has given me a Washu stem list. Vitaly Shevoroshkin passed on to me a manuscript listing of proto-Hokan reconstructions made by the Soviet scholar Dimitrij (Dima) Les[^]c[^]iner, and Sergej Nikolaev has provided me with some more recent Hokan comparative work by Les[^]c[^]iner. At the Hokan-Penutian workshop in Eugene in the summer of 1988 I profited from discussions with most of the above mentioned colleagues (apart from the Russians), as well as with Sally McLendon, Cathy O'Connor, Scott DeLancey, and several others.

1.4. **Research Strategy.** In trying to get a grip on Hokan comparative phonology, I intend to pursue a strategy I used on OM, and that worked. OM is like Hokan in number of languages, but has perhaps less time depth. I was dissatisfied with the pOM phonological reconstruction made by Rensch (1966ms, pub. 1976), and the cognate sets he assembled contained too many improbable comparisons. I therefore carefully examined each of Rensch's 427 proposed cognate sets and did one of three things:

- (a) rejected the whole set
- (b) culled unlikely items from the set
- (c) accepted the set as given.

I then catalogued all the sound correspondences found among the plausible cognates. I found all the sound correspondences Rensch had noted, plus several more. I assumed that each correspondence represented a separate proto-OM phoneme or phoneme cluster. I did a typological survey of the phonological systems of the OM languages, to guide my hypothesis building about pOM phonemes and phonotactics. I read [red] grammars of OM languages and learned how to analyze words phonologically. Then I worked out a tentative model of pOM word structure. These procedures

allowed me to postulate a realistic phonological and morphological pattern for pOM, a set of pOM reconstructions - both roots and affixes - and a set of diachronic phonological rules that account for all the roots and some of the derivational affixes of the items allowed in the cognate sets. In tightening up my historical phonological rules I realized that there was at least one additional phonological correspondence that I had overlooked. The work just described was carried out during 1982 and 1983. In the Winter of 1988 I spent two months writing up a study of comparative OM verb morphology. There is still a good deal of detail concerning compounding and derivational prefixation that has not yet been worked out. Noun inflexion, pronoun markers, and syntax are all essentially untouched. Comparative OM studies are behind those on Algonkian, Mayan, Mixe-Zoque, UtoAztecan, Iroquoian, Muskogean, and Siouan, but ahead of those for Totonacan, Chibchan, Panoan, Takanan, Tukanoan, and Maipurean (Arawakan).

I believe that if Hokan is roughly as diverse as OM, or a little more so, the method I applied to OM will yield useful results. I believe that it is necessary to have a specific set of hypotheses about pHok phonology and morphology. These hypotheses will be modified, augmented and partially or completely discarded/abandoned as work progresses, but at every stage will be capable of explaining a sizeable amount of data in the light of a genetic hypothesis.

Many scholars have spent much more time than I forming hypotheses about proto-Hokan. In spite of my relative ignorance about Hokan languages compared to most of them, I am willing to stick my neck out, at least a ways. Perhaps my boldness is due to my desire to learn in a quick and dirty way just how good the evidence for a Hokan-Otomangue connexion is. I have worked out in great detail many of the ways that T-S relates to OM and is descended from pOM (though much remains to be done). I was not interested in Hokan (believing it to be unprovable) and unconcerned with Sapir's obvious error in placing T-S in Hokan instead of in OM. Greenberg's LIA changed all that. This very careless but heavily hyped piece of work needed debunking. Part of the debunking was the systematic uncovering of Greenberg's errors, particularly the ones where others had already stated and supported with evidence the correct classification. I had to examine Hokan comparative work to find out why Sapir could have imagined that T-S was related to Hokan. In the process, as mentioned in the first paragraph, I became convinced that Hokan was a real genetic grouping and even found some evidence that Hokan and OM might be related: more on this in another study. Since I believe it to be a real genetic group, I want to know what we can learn about proto-Hokan and the diversification and history of its daughters.

Much of what I will say here about comparative Hokan will involve rehearsing facts that are already reasonably well known. I will try to integrate the relevant facts and draw tentative conclusions. Some will believe this to be premature, but if proto-Hokan is to be reconstructed we have to start somewhere. We have good data for most of the languages (except Tol [aka Jicaque], Achumawi-Atsugewi, and the dead Esalen, Kochimí, Yeméan [aka

Comecrudaoan], and Pahalat/Pajalat [aka Coahuilteco]); we do not need to wait for more accurate data.

It is not my aim to prove the Hokan hypothesis. I assume it to be correct. I am trying to find a way to reconstruct proto-Hokan phonology, lexicon, and grammar. It is, of course, necessary to specify what the languages are that are being compared, and this is done below.

The research strategy that I plan to follow for Hokan is based on that used for OM.

Learn about the grammar of each language.

Do abstract phonological analyses of each language.

Do a typological comparison.

Get lexical data.

Select promising etymologies; cull out sets and parts of sets that lack CVC matchings or that are areal.

Approach the problem as though it could be solved, i.e. assume that the languages are related.

Examine all the reconstructions and comparisons that have been made, by whatever scholar, for the constituent families that make up Hokan.

2. The Hokan Stock.

2.1. The Origin and Elaboration of the Hokan Hypothesis. The history of comparative Hokan studies from 1913 to 1970 has been nicely outlined by Margaret Langdon in Comparative Hokan-Coahuiltecan Studies (Mouton, 1974). In a revised version of the present work special attention will be given to work done since 1970 as well as to work on Hokan branch reconstructions, such as proto-Pomo and proto-Yuman.

2.2. Membership of the Hokan Stock. I specify here what languages I consider to belong to the Hokan stock, along with abbreviations I use to refer to the branches and languages that make it up.

Probable members: 1. Pomo family; 2. Chimariko; 3. Yana family; 4. Karuk language; 5. Shastan family; 6. Achu family; 7. Washu language; 8. Esalen language; 9. Salina language; 10. Yuman family; 11. Kochimí language; 12. Seri language; 13. Pajalat language; 14. Yeméan family; 15. Chontal family; 16. Tol family.

Doubtful members: 17. Chumash family; 18. Waikuri language; 19. Tonkawa language; 20. Karankawa language; 21. Cotoname language; 22. Quinigua language; 23. Yurimangui language

HOKAN STOCK [pHok] (Abbreviations that I use follow the names in square brackets. Abbreviations used by Gursky follow mine, preceded by G:)

SONOMA

1. Pomo family [pPom; G:P,Pomo]
 - Western Pomo language area [WPom]
 - SouthWestern (Kashaya) Pomo emergent lg [SWPom]
 - Southern Pomo emergent lg [SPom]
 - Central Pomo (Yokaya & Boya) emergent lg [CPom]
 - Northern Pomo lg [NPom]
 - NorthEastern (Salt) Pomo lg [NEPom]
 - Eastern Pomo lg [EPom]
 - SouthEastern (Sulphur Banks) Pomo lg [SEPom]

NORTHERN CALIFORNIA

2. Chimariko language [Chi; G:Chi,Chim]
3. Yana language area [pYan]
 - Yana emergent lg [Yan; G:Y,Yana]
 - Northern Yana dial [NYan]
 - Central Yana dial [CYan]
 - Southern Yana dial [SYan]
 - Yahi emergent lg [Yah]
4. Karuk language [Kar; G:K,Kk]
5. Shastan family [pSha]
 - Shasta lg [Sha; G:Sh,Sha]
 - New River Shasta lg [NRSha]
 - Okwanchu lg [Okw]
 - Konomihu lg [Kon; G:Ko]
6. Achu family [pAch]
 - Achumawi (Pit River) lg [Ach = G:]
 - Atsugewi (Hat Creek) lg [Ats = G:]
 - Atsuge (Hat Creek) dial [Ats-HC]
 - Apwaruge (Dixie Valley) dial [Ats-DV = G:]

GREAT BASIN

7. Washu language [Wsh; G:W,Was]

CALIFORNIA COAST

- 8. Esalen language [Esa; G:Es,Ess]
- 9. Salina (Enalen) language [Sal; G:S,Sal]
 - Miguelenyo dial [Sal-M; G:Sm]
 - Antonienyo dial [Sal-A; G:Sa]

SOUTHWEST

- 10. Yuman family [pYum; G:Yu,Yum]
 - Pai language area [Pai]
 - Paipai emergent lg [Pp]
 - Hav-Hwa emergent lg
 - Havasupai dial [Hav]
 - Hwalapai dial [Hwa]
 - Yavapai emergent lg [Yav]
 - River language area [Riv]
 - Mohave emergent lg [Moh]
 - Mar-Yum emergent lg
 - Maricopa dialect [mar]
 - Yuma dialect [Yum]
 - Dieguenyo language area [Die]
 - Mesa Grande emergent lg [MG]
 - Campo emergent lg [Cam]
 - La Huerta emergent lg [Hue]
 - Cocopa lg [Coc]
 - Kiliwa lg [Kil]
- 11. Kochimí language [Kch]
- 12. Seri language [Ser; G:Se]

COAHUILA

- 13. Pajalate [aka Coahuilteco] language [Paj = G:]
- 14. Yeméan (Comecrudoan) family [pYem]
 - Yemé (Comecrudo) lg [Yem = G:]
 - Garza lg [Gar]
 - Mamulique lg [Mam]

OAXACA

- 15. Chontal (Tequistlatecan) family [pCho; G:Cho,Chon]
 - Huamelulteco = Lowland Chontal lg [LCho]
 - Tequistlateco = Highland Chontal lg [HCho]

HONDURAS

16. Tol [aka Jicaque] family [pTol; G:Jic]
 - Eastern Tol lg [ETol]
 - Western Tol lg [WTol]

OF DOUBTFUL HOKAN AFFILIATION

17. Chumash family [pChu; G:Chu,Chum]
 - Central Chumash [CChu]
 - Island Chumash [IChu]
 - Obispenyo Chumash [OChu]
18. Waikuri language [Wai]
19. Tonkawa language [Tnk; G:Tonk]
20. Karankawa language [Krn; G:Kar]
21. Cotoname language [Cot = G:]
22. Quinigua language [Qui]
23. Yurimangui language [Yur]

Several of the Hokan member families and isolates are parts of potential linguistic areas or are in direct contact with each other. Thus Chimariko [2], Yana [3], Karuk [4], Shastan [5], and Achu [6] form a more or less unbroken continuum in Northern California; though Chimariko and Yana each stand apart from the rest in historical phonology, lexical items limited to these Hokan languages only may owe their distribution to diffusion rather than inheritance. Esalen [8], Salina [9], and Chumash [17] languages form a cluster on the Central California Coast (though I do not for the moment consider Chumash to be Hokan). Yuman [10], Kochimí [11], and Seri [12] form a bloc in the Southwest (though Kochimí is definitely a member of the same group as Yuman). Pajalat [13] and the Yeméan languages [14] belong to the area of Coahuila or Northeast Mexico. Each of the remaining Hokan families and isolates is some distance away from the nearest other Hokan group or area, and is considered to be an area in its own right. Each of these areas has probably been developing independently from some time.

An etymology that occurs in languages of at least two different areas, preferably non-adjacent ones, will be attributed to proto-Hokan. An etymology found only within a given area, such as Northern California [2-6], Coastal California [8-9, 17], The Southwest [10-12, 18], or Texas-Coahuila [13-14, 19-22] will not be attributed to proto-Hokan for the purpose of working out pHok structure.

2.3. **Conservative Views as to the Membership of Hokan.** In my opinion the Hokan stock is made up of families and isolates numbers 1-16, as listed above. I do not think there is any useful distinction to be made between "Hokan" and "Coahuiltecan".

Essentially, apart from Sapir, Swadesh, Bright, Gursky, and Greenberg, scholars generally have not accepted Hokan-Coahuiltecan as a whole or at least have not tried to test the hypothesis. Rather, they have carried out binary studies involving one or more languages from each of two genetic groups, or they have limited themselves to languages of California. I have had discussions with three conservative scholars who have opinions as to the membership of Hokan: Lyle Campbell, Bob Oswalt, Ken Whistler, and Howard Berman. Berman will only consider the groups called 'A' and 'B', and he is not sure 'A' and 'B' are related. Campbell ca 1976 surveyed the comparative literature on Hokan because he had collected data on Jicaque and wanted to know if it was related to anything. Eventually he decided it was related to Oaxaca Chontal, but not with certainty to anything else. In a unpublished paper written ca 1976 he conceded that Jicaque might also be related to Yemé (Comecrudo) and Pajalat (Coahuilteco), and perhaps also Seri, but he probably would be more cautious than that these days. Somewhat outside the angle of sight of the current topic, in a conversation with Victor Golla in the Winter of 1987 he opined: "Hokan is a residuum of proto-Amerind date."

The opinions of Whistler and Oswalt as of Spring 1987 and Berman as of Summer 1988 can be lined up as follows (and compared to my own tentative opinions):

DOES THIS GENETIC UNIT BELONG IN HOKAN?

genetic unit	Berman	Whistler	Oswalt	Kaufman
Pomo	YES 'A'	YES	CORE	YES
Chimariko	YES 'A'	YES	CORE	YES
Yuman-Cochimí	YES 'A'	YES	CORE	YES
Shasta-Achu	YES 'B'	YES	CORE	YES
Yana		YES	CORE	YES
Seri		YES	CORE	YES
Salina		YES	MAYBE	YES
Karuk		UNCLEAR	MORE DIFFERENT	YES
Washu		UNCLEAR	MORE DIFFERENT	YES
Esalen		NOT ENOUGH DATA	MAYBE	LIKELY
Chontal		NO	MAYBE	YES
Tol		NO	FARFETCHED	LIKELY
Pajalat		NO OPINION	NO OPINION	LIKELY
Yeméan		NO OPINION	NO OPINION	YES
Chumash		NO	NO	NO
Tonkawa		NO	NO	NO

XX

AK:SCH

Kroeber, A. L. 1915. 'Serian, Tequistlatecan, and Hokan', **UCPAAE** 11.279-290.

XX

JS:C

Swanton, John R. 1915. 'Linguistic position of the tribes of Southern Texas and Northeastern Mexico', **AA** 17.17-40.

XX

ES:Y

Sapir, Edward 1917. 'The position of Yana in the Hokan stock', **UCPAAE** 13.1-34.

ES:W

Dixon, Roland B. & A. L. Kroeber 1919. 'Linguistic families of California', **UCPAAE** 16.47-118. [on pp108-112 Sapir gives evidence for Washo as a Hokan language].

ES:HC

Sapir, Edward 1920a. 'The Hokan and Coahuiltecan languages', **IJAL** 1.280-290.

ES:C

Sapir, Edward 1920b. 'A note on the first person plural in Chimariko', **IJAL** 1.291-294.

ES:SW

Sapir, Edward 1921. 'A supplementary note on Salinan and Washo', **IJAL** 2.68-72.

ES:S

Sapir, Edward 1925. 'The Hokan affinity of Subtiaba in Nicaragua', **AA** 27.402-435, 491-527.

XX

PR:Y

Rivet, Paul 1942. 'Un dialecte hoka columbien, le yurumangui', **JSAP** 34.1-59.

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G&S:J

Greenberg, Joseph H. & Morris Swadesh 1953. 'Jicaque as a Hokan language', **IJAL** 19.216-222.

XX

MH:W

Haas, Mary R. 1954. 'The Proto-Hokan-Coahuiltecan word for "water"', **UCPL** 10.57-62.

MH:SH

Haas, Mary R. 1963. 'Shasta and Proto-Hokan', **Lg** 39.40-59.

MH:YN Haas, Mary R. 1964. 'California Hokan', **UCPL** 34.73-87.

XX

WB:NH

Bright, William 1954. 'Some Northern Hokan relationships: a preliminary report', **UCPL** 10.63-67.

WB:HG

Bright, William 1956. 'Glottochronologic counts of Hokaltecan material', **Lg** 32.42-48.

XX

DO:AS

Olmsted, D. L. 1956-1959. 'Palaihnihan and Shasta' **Lg** 32.73-77, 33.136-138, 35.637-644.

XX

WJ:WK

Jacobsen, William H., Jr. 1958. 'Washo and Karok: an approach to comparative Hokan', **IJAL** 24.195-212.

WJ:SR

Jacobsen, William H., Jr. 1967. 'Switch-reference in Hokan-Coahuiltecan', **Studies in Southwestern Ethnolinguistics** 238-263.

XX

Gu:H2

Gursky, Karl-Heinz 1988. 'der Hoka-Sprachstamm: Nachtrag I', **Abhandlungen der Völkerkundlichen Arbeitsgemeinschaft**, Heft 58.1-37.

Gu:YSK

Gursky, Karl-Heinz ms n.d. [a comparison of Yana, Shasta, and Karuk]

XX

Sw:LC

Swadesh, Morris 1967. 'Lexicostatistic classification', **Handbook of Middle American Indians** 5.100-115.

XX

JG:PY

Grey Crawford, Judith 1973. 'A comparison of Pomoan and Yuman', M.A. thesis, Idaho State University.

JG:SY

Grey Crawford, Judith 1976. 'Seri and Yuman'. **Hokan Studies** 305-324.

XX

LC:JH1

Campbell, Lyle 1974ms. 'Jicaque as a Hokan language'. 21pp.

LC:JH2

Campbell, Lyle ca.1975ms. 'The Jicaque-Hokan hypothesis'. 39pp.

XX

DO:JC

Oltrogge, David 1975. 'Proto Jicaque-Subtiaba-Tequistlateco: a comparative reconstruction', M.A. thesis, UT Arlington.

XX

VW:CH

Waterhouse, Viola Grace 1976. 'Another look at Chontal and Hokan', **Hokan Studies** 325-343.

XX

3. Hokan Comparative Phonology.

In the sections to follow, I will survey the (sometimes inexplicit) hypotheses that earlier researchers have made about Hokan comparative phonology. The main opinions to have been offered are those of Sapir, Haas, and Gursky. Not one of them has stated what they believe the sound correspondences are that run through the Hokan stock, nor what the proto-Hokan phonological system probably looked like - much less what the historical processes might have been that produced the various Hokan families and isolates. What we have are tentatively offered phonological reconstructions for a number of putative Hokan etymologies. Some 120 are provided by Sapir; Gursky offers almost the same number, not always for the same cognate sets; Haas has about 10. From the reconstructions given we can extract the symbols used and arrange them on an articulatory chart. Both Sapir and Haas discuss certain sound correspondences that run across the stock, but only a very few of them.

I will examine the phonological contrasts found in the Hokan languages, sound symbolism to the extent I can dig up the information, and whatever is known about sound correspondences, including those uncovered via the variety of binary comparisons carried out in the fifties, sixties, and seventies. Using the insights of Sapir, Langdon, Oswalt and others as to Hokan word structure I will devise a model of Hokan word structure. I will then offer a model of proto-Hokan phonology and phonotactics. An outline of the kind of historical account that must be given to account for the facts of the daughter languages will have to be deferred to a later study.

It is a common observation that there is a very small number of etymologies (usually characterized as being "about thirty") that have reflexes in most of the Hokan families and isolates, and that there do not seem to be any more new and good sets forthcoming. This is not a totally appropriate characterization nor does it show a very constructive attitude. A number of new correspondences and etymologies have been dug up in the course of the binary comparisons referred to above, and one should not expect proto-forms to survive in most of the daughter languages. A random scatter is quite good enough and is in any case what is to be expected in a real genetic grouping. The current version of this study is provided with an appendix listing several hundred tentative proto-Hokan reconstructions. A presentation of the complete set of data supporting each reconstruction will be made at a later time.

3.1. Phonological Systems of Certain Hokan Languages and Branch Proto-languages. In a revised version of this study I will present and discuss the phonological systems of all the Hokan languages. In the present version, apart from giving one system from each branch of the stock, I will present only those systems where I differ in my analysis of the data from the current consensus, or where the data has no generally agreed on analysis.

3.1.1. **proto-Pomo** [Oswalt, Moshinsky, Webb, McLendon, TK]

c o n s o n a n t s								v o w e l s	
b	d							i	u
	t	t.	∅	k ^y	k	q		e	o
p ^h	t ^h	t. ^h	∅ ^h	k ^{yh}	k ^h	q ^h		a	
p'	t'	t.'	∅'	k ^{y'}	k'	q'	ʔ		
			s	s [^]		x	h	length /:/	
m	n							stress /'/	
	l								
w			y						

Phonological word canon. Lexical noun words have up to four syllables, but usually have two or three. Monosyllables are rare.

#CV(H)CV*(:)[CV(:)](C)

Stress falls normally on the second syllable of a word.

H is pronounced [h] or [ʔ] according to what consonant follows, but is in CD with vowel length.

3.1.2. **Shasta** [Silver]

c o n s o n a n t s						v o w e l s	
p	t	∅	c [^]	k		i	u
p'	t'	∅'	c ^{^'}	k'	ʔ	e	a
		s		x	h		
m	n					length /:/ with both vowels and consonants	
w	r		y			high pitch /'/ low pitch [unmarked]	

3.1.3. **Chimariko** [Crawford, Grekoff, TK]

Native name is pronounced [c^'imariko] /c^'imaliko/

The analysis given here is my own, based on Harrington's data.

c o n s o n a n t s							v o w e l s		
p	t	∅	c^	c.	k	q	i	u	
p'	t'	∅'	c^'	c.'	k'	q'	e	o	
		s	s^		x	h	a		
m	n								
	l						length /:/		
w		y							

p h o n o l o g i c a l p r o c e s s e s

//k// + //x// > /qh/

V₁ + V₂ > V

a l l o p h o n i c s

/h/ [h ~ H]

/x/ [x. ~ h.]

/q'/ [q', 'ayin]

/VyC/ [VyC ~ V:yC ~ V:YC]

/l/ [l, r]

p h o n o t a c t i c s

...C₁C₁... occurs

Syllables may begin with V, C, C+h, or C+x;

[Tq'], which can also begin syllables, maybe/probably = /T'x/.

Since k + x > qh, aspirates are best analyzed as clusters, but glottalized plosives are units. This is supported by analyzing [Tq'] as /T'x/.

/ç/ is rare; /s/ is common; they hardly contrast.
 /q/ is rare; /k/ is common; /kh/ is rare; /qh/ is common;
 thus /k/ and /q/ hardly contrast.
 /th*/ is unattested.
 /c.x/ is rare.
 /t'/ is rare.
 /V:/ is fairly rare.

Words and syllables can end in V or any single C except the affricates /ç
 c^ c./

l a r y n g e a l c l u s t e r s
 & g l o t t a l i z e d o b s t r u e n t s

T	Th	Tq'	Tx	T'
	h	q'	x	ʔ
p	ph	pq' [i	px[a	p' [u
t	#	tq'	tx	t'
c.	c.h	c.q'	c.x	c.'
ç	çh		#	ç'
s	#		sx	#
s^	#		s^x	#
c^	c^h		c^x	c^'
k	kh		#	k'
q	#		qh	q'

3.1.4. **Yana** [Sapir & Swadesh, Haas]. Jacobsen and Whistler recognize glottalized resonants.

c o n s o n a n t s					v o w e l s	
p	t	c	k		i	u
p ^h	t ^h	c ^h	k ^h		e	o
p'	t'	c'	k'	ʔ		a
		s	x	h		
m	n				length /:/	
	l					
	r					
w		y				

3.1.5. **Karuk** [Bright 1957, Jacobsen]

c o n s o n a n t s						v o w e l s	
p	t		c [^]	k	ʔ	i	u
f	θ	s	[s [^]]	x	h	e	o
v	r		y				a
m	n						

length /:/; /e:/, /o:/
occur long only

//**v**// = v ~ m

//**r**// = r ~ n

high pitch /'/
falling pitch /'/'
neutral pitch [unmarked]

3.1.6. **Achumawi** [Haas, Olmsted, Nevin]. Nevin recognizes glottalized resonants and geminate consonants.

c o n s o n a n t s					v o w e l s		
p	t	c	k	q	i		u
p ^h	t ^h	c ^h	k ^h	q ^h	e	e.	o
p'	t'	c'	k'	q'		a	
	s	s [^]	x	h.			h
m	n				length /:/ with all vowels but /e./		
	l				itches:		
	r				falling /'/		
w		y			rising /'/		
					high [unmarked]		

Olmsted writes the glottalized and aspirated consonants as clusters, but he reports no /7/.

3.1.7. **Atsugewi** [Olmsted, Talmy, Walters] This chart is based on Walters 1977 but is hypothetical until compared with Len Talmy's notes.

c o n s o n a n t s					v o w e l s		
p	t	c	k		i		u
[p ^h]	[t ^h]	[c ^h]	[k ^h]	h	[e]		[o]
p'	t'	c'	k'	7		a	
	s						
m	n				length /:/		
	l				stress /'/		
	r						
w		y					

All resonants can occur glottalized: /m' n' l' r' w' y'/. Sounds in square brackets are allophonic or non-underlying.

3.1.8. **Washu** [Jacobsen]

c o n s o n a n t s					v o w e l s		
p	t	c	k		i	ɨ	u
p ^h	t ^h	c ^h	k ^h		e		o
p'	t'	c'	k'	ʔ		a	
	s	s [^]		h			
m	n		ŋ				length /:/
w	l	y					stress /'/

All resonants can occur glottalized: /m' n' n' w' l' y'/.
Affricates do not end syllables.

The rare voiceless resonants /M N D W L Y/, set up by Jacobsen, are probably to be analyzed as clusters of /h/ + resonant. Jacobsen writes (and analyzes) /p t c k/ as <b d z g>, and /p^h t^h c^h k^h/ as <p t ts k>.

3.1.9. **Salina** [Kroeber, Mason, Harrington, Jacobsen, Turner]: Antonienyo dialect

c o n s o n a n t s							v o w e l s	
p	t	t.	ɕ	c^	k		e	o
p'	t'	t.'	ɕ'	c'^	k'	ʔ	a	
			s	s^	x	h		
m	n						length	/:/
m'	n'						stress	/'/
w	l	[r]		y				
w'	l'			y'				

Glottalized resonants do not occur syllable initially.
 Salina has no aspirated consonants.
 The distinction between [x] and [h] is unclear.
 Salina has only three vowels.

phonological processes

T + ʔ > T'

3.1.10. **proto-Yuman** [Wares, Langdon, Crawford, Grey]

c o n s o n a n t s								v o w e l s		
p	t	[t.]	c^	k ^y	k	k ^w	q	ʔ	i	u
[v]			s	s.		x	x ^w	[h]	a	
m	n		n ^y							
	l		l ^y						length	/:/
	r								stress	/'/
			y		w					

/x^w k^w k^y/ do not close syllables.

/ay a:y aw a:w iw i:w uy u:y/ occur.

3.1.12. **Pajalat ("Coahuilteco")** [García in Swanton 1940, Kaufman 1973]

c o n s o n a n t s						v o w e l s	
p	t	ç	c [^]	k	k ^w	i	u
p'	t'			k'	k' ^w	e	o
		s	s [^]	x	x ^w		a
m	n						
	l						length /:/
		y		w			

3.1.13. **Yemé (Comecrudo)** [Gatschet in Swanton 1940, Kaufman 1973, 1987]

c o n s o n a n t s					v o w e l s	
p	t		k	k ^w	i	u
		s	x	x ^w	e	o
m	n					a
	l					
		y		w		

Initial clusters of stop + /l/ occur.

Stress is on the last syllable of a word, but there are some unstressed enclitic particles.

Stops have occasional voiced allophones.

/s/ and /n/ have occasional palatalized allophones.

/x/ is occasionally [h].

/x^w/ is occasionally [h^w] and [p̥].

There is some alternation between /o/ and /u/.

/a/ is nasalized and sometimes centralized before a nasal.

3.1.14. **proto-Chontal** [Turner 1969, Waterhouse 1976, revised by Kaufman 1987]

c o n s o n a n t s						v o w e l s	
p	t	c	k	k ^w	ʔ	i	u
f'	ɬ'	c'	k'	k ^{w'}		e	o
f	ɬ	s.	x	x ^w		a	
m	n						
	l					stress /' /	
		y		w		?length /:/	

n + C clusters occur.
 7 + resonant clusters occur.
 m + consonant clusters occur.

3.1.15. **proto-Tol (Jicaque)** [Campbell ms, Campbell & Oltrogge 1980]

c o n s o n a n t s					v o w e l s		
p	t	ɕ	k		i	ɨ	u
p ^h	t ^h	ɕ ^h	k ^h		e		o
p'	t'	ɕ'	k'	ʔ		a	
		s		h			
m	n						
	l						
w		y					

3.2. Phonemic Contrasts in Hokan Languages.

3.2.1. To get an idea of what the broadly general traits of Hokan phonological systems are, I present below those phonological contrasts that are common or predominant in these languages.

/C'/ vs. /C/: pPom, Chi, Yan, Sha, Ach, Wsh, Sal, Paj, pCho, pTol
no /C'/: Kar, pYum, Ser
[Yem unclear]

/C^h/ vs. /C/: pPom, Chi, Yan, pAch, Wsh, pTol
no /C^h/: Kar, Sha, Sal, pYum, Ser, Paj, pCho, [Yem unclear]

/t./ vs. /t/: pPom, Chi, Sal, [pYum]
no /t./: the rest

/c[^]/ vs. /ç/: Chi, Sha, Sal, Paj
no contrast: the rest

/k^y/ vs /k/ or /q/: pPom, pYum
no contrast: the rest

/q/ vs. /k/: [pPom], Chi, Ach, pYum
no contrast: the rest

/k^w/ vs. /k/: pYum, Paj, Yem, pCho
no /k^w/: the rest

/f/ vs. /p/: Kar, Ser, pCho
no /f/: the rest

/s[^]/ or /s./ vs. /s/: pPom, Chi, [Kar], Ach, Wsh, Sal, pYum, Ser,
Paj
no contrast: Yan, Sha, Ats, Yem, pCho, pTol

/x^w/ vs. /x/: pYum, Paj, Yem, pCho
no /x^w/: the rest

/h/ vs. /x/: [pPom], Chi, [Yan], Sha, Kar, Ach, [Sal]
no contrast: the rest

/r/ vs. /l/: Yan, pAch, pYum
no contrast: the rest

/e/ vs. /i/: pPom, Chi, Yan, Sha, Ach, Wsh, Ser, Paj, Yem, pCho,
pTol
no contrast: Kar, Ats, Sal, pYum

/o/ vs. /u/: pPom, Chi, Yan, Ach, Wsh, Paj, Yem, pCho, pTol
no contrast: Kar, Sha, Ats, Sal, pYum, Ser

/ɨ/ vs. /i/ or /u/: Wsh, pTol
 no /ɨ/: the rest

vowel length: pPom, [Chi], Yan, Sha, pAch, Wsh, Sal, pYum, Ser, Paj
 no contrast: ?pCho, pTol

stress or pitch: pPom, Kar, Sha, pAch, Wsh, Sal, pYum, Ser, pCho
 no contrast: Chi, Yan, Yem, pTol

3.2.2. The following is a sort of common core that is predominant (though not universal) in the Hokan languages:

c o n s o n a n t s							v o w e l s	
p	t	c		k	ʔ		i	u
p'	t'	c'		k'			e	o
		s	s [^]	x	h		a	
m	n							
	l						length	/:/
w		y					stress	/'/

3.2.3. Just in terms of the phonemic contrasts commonly found in Hokan languages, the following set of phonemic contrasts is the maximum that is supported typologically (i.e. found in at least three branches):

c o n s o n a n t s								v o w e l s	
p	t	t.	∅	c [^]	k	k ^w	q	i	u
p ^h	t ^h	t. ^h	∅ ^h	c ^{^h}	k ^h	k ^{wh}	q ^h	e	o
p'	t'	t.'	∅'	c ^{^'}	k'	k ^{w'}	q'	ʔ	a
f			s	s [^]	x	x ^w	h		
m	n							length	/:/
	l							stress	/'/
	r								
		y			w				

3.2.4. The following contrasts are found in only three or four Hokan branches, but seem likely or at least promising: /t./, /c^/, /q/, /k^w/, /x^w/, /f/. Sound correspondences across Hokan genetic units suggest that most (but not necessarily all) of the above entities are likely labels for recurrent correspondences: in addition, correspondences that we will label *[k^y], *[x^y], *[\theta], *[l^y], and *[n^y] are found. More on this later, when a particular phonological structure for proto-Hokan is argued for.

3.3. **Ablaut in Hokan.** Ablaut (or apophony) is a term/concept that refers to recurrent patterns of alternations between definable sets of phonemes in morph shapes that cannot be explained by any obvious phonological factors but can be correlated with grammatical, semantic, or lexical facts. The best-known case of ablaut is of course the alternations between/among non-high vowels and zero in older IE languages and reconstructed pIE. These alternations have grammatical correlates and constitute a morphophonemic subsystem. Via internal reconstruction of pIE itself a partial explanation of ablaut on phonological grounds has been achieved, but this is secondary to the descriptive situation where ablaut must be recognized as a system of alternations in the phonemes that represent some meaningfully large set of morphemes where the conditions are grammatical or lexically peculiar rather than phonological. Ablaut can be used to describe alternations between consonants as well as vowels. Several American Indian languages, such as Chinook and Totonac, have alternations between sets of two or three partly similar consonants to mark diminutive/respect and augmentative/contempt. Both vocalic and consonantal ablaut are found in at least some Hokan languages.

Even with our primitive ideas about comparative Hokan phonology, several good Hokan etymologies require the positing of proto-forms with more than one allomorphic variant in any reasonable reconstruction. For example we must reconstruct something like #i-mi 'foot' and #ma- 'with the foot'. The conditions/explanations for these variations may be either (a) grammatical, (b) phonological, or (c) accident. We should not be too free in positing vocalic ablaut for pHok, but we should be open to the possibility.

Consonantal ablaut. Many Hokan languages show consonantal alternations with size symbolic functions. A sketch of some of the types that have been reported or observed is given below.

KARUK. Normal vs. diminutive

θ	c [^]
r	n
v	m

YANA. Normal vs. diminutive

l	n
---	---

YUMAN. From data cited in Langdon 1971 and Shaterian 1983.145-164 we can make a series of observations about consonantal ablaut in Yuman languages. According to Langdon it encodes mainly intensity, and less obviously, size. According to Shaterian it encodes size, intensity, and affect.

The following composite chart specifies the sets of alternants found in the data of Langdon and Shaterian. The phonemes are cited in proto-Yuman garb. The labels given to the columns are those noted by Shaterian. The Yavapai data is from Shaterian. Langdon provides the rest of the data.

?	more	intense	larger	smaller	worst	neutral	nicest	?	intensity	size	affect	languages
	k	q										Ipa, Yum, Coc, Yav
	k ^w	q ^w										Coc, Yav
	s	s.										Ipa, Tip Coc, Yav
	l	r					n					Yav, Yum, Kil
l ^y	l						n					Ipa, Coc, Yum
l ^y	l											Ipa, Coc
l ^y		r										Ipa, Tip, Coc
l ^y	l	r						n ^y				Yum [no /l/] Ipa [no /r/]

There is another alternation that will not fit on this chart: it is *r ~ *s., found in Tip, Coc, and Yum. I am not sure how many items in each language show this alternation and I am hesitant to make much of it.

Langdon (p167) postulates the following set of consonant alternations for proto-Yuman, saying:

"It is therefore suggested that among Proto-Yuman consonants the following... were capable of being affected in some roots by a process of alternation denoting various degrees of intensity while not otherwise affecting the basic meaning of the root: *s, *s., *r, *l, *l^y (perhaps also *n)"

I would say certainly *n, and quite likely *n^y, but I would break the sequence between *s. and *r without seeing more evidence that there is anything recurrent in the connexion. The alternations between *k and *q, and between *k^w and /q^w/ (not a proto-Yuman phoneme) suggest that there are several sets of alternations rather than just a single one. Vocalic ablaut in Hokan is discussed further on in section 6.4.2.

4. Previous Work on Comparative Hokan Phonology.

4.1. **Sapir's Ideas on Hokan Comparative Phonology.** In Sapir 1917b, 1920a and 1925 are found over 100 suggested proto-Hokan reconstructions and a few observations about sound correspondences and word structure. From the reconstructions offered we may extract the following segments, represented with currently employed Americanist phonological symbols:

c o n s o n a n t s						v o w e l s	
p	t	c	k	k ^w	ʔ	i	u
p'		c'	k'				
p ^h			k ^h	k ^{wh}		a	
		s	x ^y	x.	x. ^w		
m	n					vowel length /:/	
	l						
		y		w			

The gaps in the glottalized and aspirated series are presumably accidental.

My /c/ is Sapir's <tc>.

Sapir has <s'> ~ <ts'>, and <tc!> once each. I lump them as /c'/.

Sapir has <s> 18 times and <c> [s[^]] twice. I lump them as /s/.

Sapir writes the labialized velars of the above chart sometimes as clusters, sometimes with raised w. It seems clear that they should be interpreted as phonetically complex segments. Their structural analysis is another matter.

Random/unrepeated (once only) symbols and combinations thereof:

- [g], [d], [t.], [r], [e], [o].
- [g] probably goes with /k/;
- [d] and [t.] probably go with /t/;
- [r] probably goes with /l/.

Sapir specifies *e and *o in some of his reconstructions, but they are quite rare, and usually alternatives with *i and *u respectively are also found.

The following each occur once only, but might represent real sound correspondences:

[zy] or [ty]: *(i)tya, *izya 'road'
[sy] or [ty]: *i(s)yu, *ityu 'eye'

The nasal in the following item is found only in Washu and probably comes from *w:

[(n)ɣw]: *a(n)ɣwa 'mouth'

The following crucially depends on Sutiaba, and is probably illusory:

[nw]: *anwa 'mountain'

Phonotactics.

Sapir posits pHok morphemes of the following shapes:

	CV	
	CVCV	VCV
2 exx only	CVhCV	VhCV
5 exx	CV7CV	V7CV
	CVCVCV	VCVCV

Between vowels the following clusters are attested once only:

sw in *aswa(-7n-) , *iswa(-7n-) 'fish'
nw, lw in *alwa, *anwa 'sun'
hy in *(i)hyak(a) 'bone'

These clusters are accounted for above:

7t in *ax.^wa(7)ti, *ax.^wata-, ax.^wat- 'blood'
7n in *m-a7ni-, *p-a7ni- 'full'; *i7na- 'ripe';
cf. 'fish', above.
7s in *(m-)a(7)su 'raw'
7m in *i(7)ma 'sky'

Sapir assumed that medial CC clusters (except 7C, Cy, and Cw) arose through vowel dropping at a post proto-Hokan level, but occasionally he made reconstructions that show CC medial clusters.

nk' in *aswank'a-, *aswa7nka- 'lizard' (derived from 'fish')
mw in *amwa, *ama, *uma 'earth'
lm in *ax.walma- 'three'

Other clusters are the result of (optional) vowel dropping:

hn: *ix.ana-, *ihna-xw- 'good'
sn: *isim, *isam(a), *is(a)ma(l)k(a) 'ear'
sl, sn: *is(i)lu-, *is(i)la-, *is(i)nu-, *is(i)na 'head'

The first item listed above suggests that perhaps there was no *x. vs. *h contrast.

Sapir does not reconstruct word-final consonants except in the following cases (other cases involve optional vowel drop):

*ixa7(-pi) 'stone'
*a7xa, *(a)xa7- 'water'
*inak 'woodpecker'
*(u)xwi-l 'belly'

The last two forms may be assumed to be post-*proto-Hokan* forms, but maybe not.

Sapir assumed that there was widespread assimilation between the vowels of adjacent syllables.

Sapir believed that stress could occur according to more than one pattern in early *Hokan*, though perhaps according to grammatical context.

Sapir reconstructs several *pHok* forms with both *l and *n. This reflects an alternation involving sound symbolism found in several *Hokan* languages, wherein /l/ is the basic phoneme. Below are given the *l-forms reconstructed by Sapir; he also gives *n-forms.

*is(i)lu-, *is(i)la- 'head'
*alwa 'sun'
*x.walu-, *x.(w)ulu- 'inside'
*k^hwali 'to come'

Sapir notes that many of the word-initial vowels that he reconstructs do not have reflexes in all the languages, and that in the languages that show reflexes of the vowels in question, the morphemes in question occasionally have allomorphs without these vowels, particularly when in compounds.

Note: the job in this section has already been largely carried out by Margaret Langdon in '*Hokan-Siouan Revisited*'.

While it is possible to evaluate the *pHok* reconstructions offered by Sapir, to say how adequate they are, it is difficult to be sure why he reconstructed the way he did, except in a few cases where, for example, he talks about vowel dropping, or a distinction between a front *[x^y] and a back *[x.]. He does not justify reconstructing glottalized consonants, or aspirated consonants, or a three-vowel system. He does not in general discuss regular sound correspondences (except that *p^hu > xu in *Chimariko*). Sapir was aware that the available data, except for *Yana*, was phonologically underspecified if not totally inadequate. I reckon that he intended his *pHok* starred forms as an approximation to what a full reconstruction would be when phonologically adequate data was available.

4.2. **Haas's Ideas on Proto-Hokan Phonology.** In Haas 1954, 1963, and 1964 occur approximately ten proto-Hokan reconstructions. A whole articulatory chart cannot be inferred from the items found there, but the following observations can be made:

- three vowels /i a u/;
- a labialized velar series /k^w x^w/;
- glottalized plosives;
- shibilant vs. sibilant spirants and affricates.

4.3. **Gursky's Ideas about Proto-Hokan Phonology.** In Gursky 1965, 1966b and 1974 appear over 100 proto-Hokan reconstructions, with essentially no discussion of the sound correspondences on which they were based, if indeed they were produced in that way. There does exist an untitled undated manuscript by Gursky in the UCB Linguistics department's Survey Office wherein he compares Yana, Shasta, and Karuk and identifies 65 sound correspondences among those three languages. In 1965 and 1966 Gursky preceded his proto-Hokan reconstructions with ~ *. In his 1974 article Gursky refers to Dell Hymes's practice in an article on Penutian of using # both before and after reconstructions that are not fully specified or otherwise tentative, and adopts the same practice. I follow this practice, too (but put the # only in front of the suggested reconstruction), having developed it independently of Hymes, as we both discovered in a conversation in 1962 when we were looking over the data that Hymes eventually included in the article referred to above. Gursky's proto-Hokan phonological elements are displayed on the articulatory chart below:

c o n s o n a n t s									v o w e l s		
p	t	t.	c	c [^]	k ^y	k	k ^w	ʔ		i	u
			c'			k'	k ^w '			a	
						k ^h					
			s		x ^y	x	x ^w	h		vowel length /:/	
m	n						ŋ ^w				
	l										
	r										
			y				w				

The gaps in the glottalized and aspirated series are presumably accidental.

The following symbols occur once each:

- [c[^]'], [s[^]], [ʈ], [ʂ], [q^h], [o].

Gursky reconstructs several forms with both *l and *n:

#(i)tal/na# 'arm 1'
#l/na/ux# 'head'
#pal/n# 'near'
#isiwil/n# 'pine 4'

Gursky reconstructs several forms with both *i and *a in initial position. Apparently in these cases Gursky feels that a vowel assimilation hypothesis like Sapir's won't work:

#a/ix^yawat.ti# 'blood'
#i/a7yak# 'bone'
#i/apa# 'man'
#i/ap^ha-# 'excrement, intestines'
#i/api# 'cover'
#i/a7wa# 'to go 2'
#i/awa# 'house'
#i/ama# 'to hunt'
#i/alak^wi# 'navel'
#a/isay(i)# 'sun'

The following have both *i and *u in initial position:

#i/upaki# 'neck'
#ima ~ oma# 'ripe'
#uyi ~ iyu# 'eye'
#ip^hu-i ~ up^hi# 'fat'

Unlike Sapir, Gursky reconstructs a large number of pHok forms with a variety of final consonants.

The following medial clusters occur in Gursky's reconstructions:

#asilmak# 'back'
#i/a7yak# 'back'
#yacisk'a# 'breast'
#(7a)7ahw# 'fire'
#i/a7wa# 'to go 2'
#wes(y)u# 'horn'
#it.7ala# 'leaf' (maybe *t.` is intended)
#iwapsi# 'liver'
#ac^(7)i# 'louse'
#iwa7ri# 'nose'
#(h)itya(wa)# 'path'
#c(7)isk^wak^wa-ka# 'robin'
#ax^ya7pi# 'stone'

The following types of clusters occur in the above data:

7C (4x), C7 (3x), sC (3x), Cy (3x), Cs (1x), hC (1x)

4.4. **A Synthesis of Sapir and Gursky.** If we were to combine the explicit and implicit aspects of Sapir's and Gursky's phonological elements and their distributions, a picture with the following outlines would emerge for the maximum set of contrasts:

c o n s o n a n t s										v o w e l s	
p	t	t.	ty	c	c [^]	k ^y	k	k ^w	ʔ	i	u
p'	[t']	t.'		c'	c [^] '		k'	k ^w '		[e]	o
p ^h	[t ^h]	[t. ^h]		[c ^h]	[c ^{^h}]		k ^h	k ^{wh}		a	
			sy	s	s [^]	x ^y	x.	x. ^w	h		
m	n							ŋ ^w		vowel length /:/	
	l									stress	
	r										
					y		w				

*ŋ^w stands for Sapir's *ŋw and Gursky's *w.

*ty and *sy are written as clusters but might be unit phonemes.

*k^y is supported only by Gursky, but helps support *x^y, which both agree is needed.

*e is found only in Sapir, and is likely only if *o is needed.

*q^h is found in Gursky, but is not obviously needed to make the chart symmetrical.

Phonotactics. (H = /h ʔ/; Y = /y w/)

(C)V(H/s/l)C(Y)V(C) (V)

The reason for comparing Sapir and Gursky is to get a feeling for what the general range of ideas has been about the possible structure of proto-Hokan. Ultimately, we will reconstruct for proto-Hokan a typologically reasonable sound system that accounts for the phonological correspondences in what seem to be good etymologies.

5. **Hokan Sound Correspondences.**

In this section I will present all the sound correspondences that have come to my attention or that I have identified that run through the stock or a sizable part of it. They will be presented in such an order as to show how they are either in probable contrast or complementary distribution, and how certain of them fall together in some or most of the languages. This display is tentative in a number of ways, but accurately reflects the current state of my view of comparative Hokan phonology. The section on vowels, particularly mid vowels, is especially sketchy and somewhat programmatic.

5.1. Consonant Correspondences.

pHok	*C ^h	*C'	*px	*f	*p
pPom	*C ^h	*C'	*p ^h	*b	*b
Chi	Ch	C'	x, px	p, w, Ø	p
Yan	C ^h	C'	p ^h	p	p
Kar	C	C	f	f, v, h, ?p	p
Sha	C (*p ^h > h)	C'	px	w, p	p
Ach	C ^h	C'	px	w, p	p
Ats	?	C'	ph	?	p
Wsh	C ^h	C'	p ^h	p	p
Esa					
Sal	C	C'	px	p, w	p
pYum	*C	*C	*[vx]	*p, [v]	*p, [v]
Cch					
Ser	C	C	px	f	p
Paj	C	C'			
Yem	?	?	p	?	p
Cho	C	C'	f	f	p
Tol	C ^h	C'	p ^h	p	p

pHok	*w	*m	*t.x	*t.	*t
pPom	*w	*m	*t. ^h	*t.	*t,*d
Chi	w	m	?	c.	t
Yan	w	m	?	t	t
Kar	v,∅	m	?	t	t
Sha	w,∅	m	tx	t	t
Ach	w	m	?	t	t
Ats	w	m	?	t	t
Wsh	w,n	m	?	t	t
Esa			t	t.	t
Sal	w	m	?	t.	t
pYum	*w	*m	*t	*t,[t.]	*t,[t.]
Cch					
Ser	?	m	t	t	t
Paj	w	m	t		
Yem					
Cho	w	m	?	t	t
Tol	w	m	?	t	t

pHok	*θ	*7θ	*y	*s	*s^
pPom	*y	*7d	*y	*s	*s^
Chi	s	ss	y	s	s^
Yan	y	:y	y	s	s
Kar	y		y, ∅	s	s
Sha	y	c^c^	y, ∅	s	s
Ach		[hd]	y	s	s^
Ats	y		y		s
Wsh	y		y	s	s^
Esa	y				
Sal	∅		y	s	s^
pYum	*y		*y	*s	*s.
Cch					
Ser	t		y	s	s.
Paj					
Yem	y				
Cho	∅, y		y	s.	s.
Tol	H			s	s

pHok	*cx	*ç	*c^	*h	*7#
pPom	?	*c	*c	*h	∅
Chi	c^x	s, ç'	c^	h	∅
Yan	c ^h	c	c	h	∅
Kar	?	θ	c^	h	∅
Sha	?	ç	c	h	?
Ach	?	c	c	h	?
Ats	c	c	c	h	?
Wsh	?	c	c		
Esa					
Sal	sx	ç	c^	?	7
pYum	?	*c	*c	*7, *y, *w	*7
Cch					
Ser	?	c	c		
Paj					
Yem					
Cho	?	c	c	?	7
Tol	?	c	c		∅

pHok	*x ^y	*x ^w	*x.	*V:
pPom	*q ^h	*h	*h	V:
Chi	q ^h	h, x	x	V
Yan	x	x	x	V:
Kar	s	x	x	V:
Sha	∅	x	x	V:
Ach	s	x	x	
Ats	c			
Wsh	s [^]	x	x	V, V:
Esa	s [^]	x		
Sal	s [^]	x	x	V:
pYum	*x	*x ^w	*x	*V:
Cch				
Ser	x	x	x	V:
Paj				
Yem	x	x ^w	x	
Cho	x	x ^w	x	V
Tol	h	h	h	V

pHok	*k ^y	*k ^w	*q	*qx.
Pom	*k ^y	*k ^y , *k, *q	*q	*q ^h
Chi	k	k, q	q	qh
Yan	k	k	k	k ^h
Kar	k	k	k	x, k
Sha	k	k	k	k, x
Ach	k	k, q	q	k, x
Ats	k		[q]	[q], x
Wsh	k	k	k	k ^h
Esa				k
Sal	k	k	k	k, x
pYum	*k ^y , *k	*k ^w , [q ^w]	*k, *q	*q(x), *k
Cch				
Ser	k	k	k	k
Paj		k		
Yem	k	k ^w		
Cho	k	k ^w	k	?
Tol	k	k	k	k ^h

pHok	*r	*l ^y	*l	*n	*n ^y
pPom	*l	*-l ^y , *d-	*l	*n	*-n ^y , *d-
Chi	l, [r]	l, [r]	l, [r]	n	n
Yan	r	l	l	n	n
Kar	r	r	r	n	n
Sha	r	r	r	n	n
Ach	r	l	l	n	n
Ats	r	l	l	n	n
Wsh	l	l	l	n	l
Esa					
Sal	l	l	l	n	n
pYum	*r	*l ^y	*l	*n	*n ^y
Cch					
Ser	±	±	±	n	n
Paj					
Yem				n	
Cho	±	l-, -±	l	n	n
Tol	?	l	l	n	n

5.2. **Vowel and Diphthong Correspondences.** Little evidence is yet available that length or its absence affects the quality of vowel reflexes, but the possibility must be contemplated. The diphthong correspondences are somewhat speculative, and require rethinking in the light of the vocalic ablaut patterns discussed in section 6.4.2, namely *a ~ *o, *i ~ *a, *i ~ *u.

pHok	*i	*e	*a	*o	*u
pPom	*i	*e	*a	*o	*u
Chi	i	e	a, o, u	o	u
Yan	i	e	a	o	u
Kar	i	i	a	u	u
Sha	i	e	a	u	u
Ach	i	e	a	o	u
Ats	i	[e]	a	[o]	u
Wsh	i, ð	e	a, e	o	u, ð, o
Esa					
Sal	e	e	a	o	o
pYum	*i	*i	*a	*u	*u
Cch					
Ser	i	e	a	o	o
Paj					
Yem					
Cho	i	e	a	o	u
Tol	i, ð	e	a	o	u, ð

pHok	*iy	*ey	*ay	*oy	*uy
pPom	*i(y)	*e(y)	*ay	*o(y)	*u(y)
Chi	i	ey	ay	o	o
Yan	i:	e:	ai		
Kar	i:	i:	ay		
Sha	i:		ay		
Ach					
Ats					
Wsh					
Esa					
Sal					
pYum	*i:(y)	*ay	*ay	*uy	*uy
Cch					
Ser	i:	e:	ay		
Paj		e(y)	oy		
Yem			ay		
Cho	i	e	ay		
Tol	i, ð	e	ay		

pHok	*aw	*ew	*ow	*uw	*iw
pPom	*aw		*o(w)		
Chi	aw	o	o	u	u
Yan	au	au	au	u	u
Kar	a	a	u:	u:	iv
Ach	aw	aw	ow	u	u
Ats	aw	aw			
Wsh				±w	±w
Esa					
Sal	aw	aw	o	o	o
pYum	*aw	*aw	*aw	*u:(w)	*iw
Cch					
Ser					
Paj					
Yem					
Cho		o	o	u	u
Tol		aw	o	o	

5.3. An Alternative Formulation of Hokan Vowel Correspondences. Hokan languages have between 3 and 6 phonemic vowels. Some languages have phonemic vowel length, others do not. Languages with 3 (Kar, Ats, pre-Yan, Sal, pYum) or 4 vowels (Sha, Ser) always have vowel length; languages with 5 (Cho, Wsh, Chm) or 6 (Tol) vowels usually lack vowel length. pPomo is exceptional in having vowel length and 5 vowels as well, but pPomo does not have long diphthongs, while most 3 and 4 vowel languages do.

In pHok vowel length may be an allophonic realization of *h. That would help account for the situation in Pomo where preconsonantal [h], [ʔ], and [ː] basically do not contrast.

Based on the typological facts of the total set of contrasting syllabics of known Hokan languages, recognizing vowel length and all imaginable vowel (V) + semivowel (Y) clusters, it is possible to imagine that proto-Hokan had just three vowels, *i *a *u, that could occur in the pattern V(:)(Y). If so, we might expect to find the following syllabic correspondences among selected Hokan languages. It should be stressed that the formulation given below is programmatic rather than empirical. The reconstructions given at the end of this paper are made according to the vowel correspondences already given above, not the ones given below.

pHok	*i:w	*iw	*u:w	*u:	*uw
pPom	*u(:)?	*ew	*u(:)	*u(:)	*ow
Chi	?	ew	u(w)	u	ow
Yan		u:	u:~/au?	u:	u:~/au?
Kar		iv		u:	
Sha				u:	
Ach					
Ats					
Wsh					
Esa					
Sal					
pYum	*i:w	*iw	*u:(w)	*u:	*uw,u:
Cch					
Ser					
Paj					
Yem					
Cho	ew	iw?	ow	u	u(w)
Tol					

pHok	*u	*aw	*a:w	*u:y	*uy
pPom	*u,o	*o(:)	*aw	*uy	*oy
Chi	u,?o	?o	aw	uy	oy
Yan	u,o?	o(:)	au	ui	
Kar	u		o:		
Sha	u				
Ach					
Ats					
Wsh					
Esa					
Sal	u				
pYum	*u	*aw	*a:w	*u:y	*uy
Cch					
Ser	o				
Paj					
Yem					
Cho	u	o	aw	oy?	uy
Tol					

pHok	*a	*a:	*i:y	*i:	*iy
pPom	*a	*a(:)	*iy	*i(:)	*ey
Chi	a,o,u	a	iy	i	ey
Yan	a	a:	i:~/ai?	i:	i:~/ai?
Kar	a	a:			
Sha	a	a:			
Ach					
Ats					
Wsh					
Esa					
Sal					
pYum	*a	*a:	*i:(y)	*i:	*iy,i:
Cch					
Ser					
Paj					
Yem					
Cho	a	a	eY	i	i(y)
Tol					

pHok	*i	*ay	*a:y
pPom	*i,e	*e:	*ay
Chi	i,?e	?e	ay
Yan	i,e?	e(:)	ai
Kar	i		e:
Sha			
Ach			
Ats			
Wsh			
Esa			
Sal			
pYum	*i	*ay	*a:y
Cch			
Ser			
PaJ			
Yem			
Cho	i	e	ay
Tol			

Note that a full set of sound correspondences for Tol can not yet be specified, due to lack of data. The situation is even worse for Yemé (Comecrudo), Pajalat (Coahuilteco) and Esalen, all of which are dead.

6. A Series of Hypotheses about Proto-Hokan Phonological Structure.

6.1. **Phonemes.** I postulate that proto-Hokan had the following set of phonemes and/or contrasting phonological entities (some of which may turn out to be analyzable as clusters):

c o n s o n a n t s										v o w e l s	
p	t.	t	ɸ	c [^]	k ^y	q	k ^w	ʔ		i	u
p'	t.'	t'	ɸ'	c [^] '	k ^y '	q'	k ^w '			e	o
p ^h	t. ^h	t ^h	ɸ ^h	c ^{^h}	k ^{yh}	q ^h	k ^{wh}			a	
f		θ	s	s [^]	x ^y	x.	x ^w	h		length /:/	
	r									stress /'/'	
	l	l ^y									
m	n	n ^y									
				y		w					

NOTE: *t is postulated to have been apicodental, and in my handwritten notes I always write it with a half-circle underneath. Lack of a convenient way to keyboard it has led me to omit that diacritic in this document with no loss of information, but it should be kept in mind that I consider it to be a marked segment in contrast to apicoalveolar *t., which I categorize as unmarked.

6.2. Interesting Correspondences.

6.2.1. ***θ.** The reconstruction of *θ is one of only two cases of reconstructed segments that are unparalleled in the daughters, inasmuch as Karuk /θ/ is obviously the moral equivalent of /ɸ/. The reconstruction of *θ is based on Chi /s/ = Ser /t/ = other languages /y/. Pomo reflects pHok *7θ as pPom *7d. This is not a frequent phoneme, but it occurs in at least ten good etymologies, and that is good enough for me. In fact, in the course of carrying out this research, I had only about four good cases at the outset. The other instances fell into my lap as I continually read through the etymologies proposed by other scholars. The reflexes include stops, spirants and resonants, voiceless and voiced segments. A phonetic realization as [ð] is a possible alternative to the

symbol I have chosen. An analysis as a cluster is not promising, since its reflexes are always single segments. I have assembled 7 etymologies pointing to pHok *θ; one of them is restricted to Northern California: *+θ a 'female noun' [NC]; *(u/i-)θiw 'eye, face' [N/S]; *θu 'to be' [N/S]; *[i/a-]θa(w) 'tooth' [N/S]; *hiHθa 'path, road' [N]; *θowP 'sharp' [N/S]; *aθu 'sweet' [SW].

6.2.2. *x^y. This is the second proto-Hokan phoneme that is unparalleled in the daughter languages. The correspondence lying behind pHok *x^y is Pom, Chi /q^h/ = Kar, Ach /s/ = Sha, Ats /c/ = Wsh, Esa, Sal /s^h/ = other languages /x/. Sapir recognized the phonemic distinctness of pHok *x^y from what I label */x./.

6.2.3. *l^y. Yuman languages are the only ones to have an underlying segment /l^y/, but several Hokan languages have other things than the reflex of pHok *l (Ser ‡ = Kar, Sha /r/ = others /l/) corresponding to pYum *l^y. Cho has /l/ initially and /ɭ/ finally; pPom has *d initially and *l^y finally. Proto-Pomo *l^y is an element reconstructed by McLendon to account for certain word-final correspondences involving both /l/ and /:/ in the daughters, and corresponding roughly with proto-Yuman *l^y. This hypothesis on McLendon's part seems to have been quite correct.

6.2.4. *n^y. As with /l^y/, Yuman languages are the only ones to have an underlying segment /n^y/. Apart from Pomo all other Hokan languages have the same reflex for pHok *n and *n^y. In pPom, the reflexes are *d initially, and *n^y finally. pPom *n^y is a device used by McLendon to account for some correspondences in the Pomo languages involving /n/ in some languages and /:/ in others. As with *l^y, McLendon seems to have hypothesized correctly, even though she knew of no correspondences between pYum *n^y and pPom *n^y. This phoneme is not very frequent, but is attested in a respectable number of etyma.

6.2.5. *r. Proto-Hokan *r is reconstructed on the basis of the correspondence Yan, Ach, Ats, Yum /r/ = Cho /ɭ/ = others /same as pHok *l/. This phoneme is not frequent and apparently does not occur root- or word-initially.

6.2.6. *t.. This proto-Hokan phoneme has reflexes distinct from those of *t in pPom /t./, Chi /c./, Sal /t./, and probably Esa. The rest of the languages show /t/, except Yuman. In many Yuman languages /t./ contrasts with /t/, but the former only occurs after stress. Comparative Yumanists have apparently succeeded in avoiding reconstructing *t. for pYum. The presence of phonetic [t.] in Yuman languages suggests that if in pYum there was no /t./ phoneme, there probably was a [t.] segment, and I reckon that when pHok *t. and *t fell together in pYum, both segments were brought into an allophonic relationship, by eliminating each of the phones from certain standard environments, thus bringing them into complementary distribution.

6.2.7. ***k^y**. Only some Yuman languages and proto-Yuman have a phoneme /k^y/, but pHokan *k^y is based on a wider set of facts than this. In proto-Pomo, where McLendon reconstructs *k and Oswalt reconstructs *c[^] (written <*c>), I reconstruct *k^y, since Oswalt has shown that a separate *k-series is required and I believe that in principle [c[^]] cannot turn into [k] although Oswalt's reconstruction of *c[^] requires precisely this. Reconstructing *k^y for pPom solves these problems. Many Hokan languages lacking [k^y] have a phonemic contrast between /q/ and /k/, and /q/ is in fact more frequent than /k/. Thus pHok *k^y is the marked member of the opposition k^y:q. It is based on the following correspondences: pYum *k^y (sometimes *k) initial, *k final = Chi /k/ = pPom *k^y = Ach maybe /k/. In the other Hokan languages *k^y and *q have the same reflex, namely /k/. Proto-Hokan *q is based on the correspondence pPom *q = Chi /q/ = maybe Ach /q/ = pYum *k and *q. The Yuman situation is complicated in that where pHok had *k^y and *q, Yuman languages have /k^y/, /k/, and /q/. /k^y/ is rare, being disallowed syllable-finally, and having shifted to /k/ syllable-initially in a number of cases under conditions not yet worked out. /q/ is rare, and there is a kind of size:respect symbolism in Yuman involving alternation between /k/ and /q/. In fact /k/ may be the normal Yuman reflex of pHok *q. The presence of all three dorsal stops in Yuman may be the left-overs of a system where there were only two phonemes but three allophones among them. There is no evidence from the rest of the stock that any more than two dorsal stops should be reconstructed for pHok.

6.2.8. ***k^w**. Only Yuman, Chontal, Yemé (Comecrudo), and Pajalat (Coahuilteco) have a labialized velar stop series, but the reconstruction of pHok *k^w is based on the correspondence pYum *k^w = Cho /k^w/ = pPom *k^y near front vowels and *q near *a = Chi (and maybe Ach) /k/ near front vowels and /q/ near /a/. The Pajalat reflex of pHok *k^w is apparently /k/. It is not clear whether pHok *k^w can or should be reconstructed next to rounded vowels. In all other Hok languages *k^w has the same reflexes as *q and *k^y.

6.2.9. ***x^w**. Only Yuman, Chontal, Yemé (Comecrudo), and Pajalat (Coahuilteco) have a phoneme /x^w/. The reconstruction of pHok *x^w is based on pYum *x^w = Cho, Com /x^w/ = Chi /h/ sometimes and /x/ others (conditions still unclear). In all other Hokan languages *x^w has the same reflexes as pHok *x..

6.2.10. ***px**. Several Hokan languages, among them Chi, Sha, Ach, Sal, Yum, and Ser, have plosive + /x/ clusters. In Chi and Ach, these clusters contrast with aspirated plosives; in pPom, Yan, and Wsh corresponding to plosive + /x/ we find aspirated plosives. In the rest aspirated plosives do not occur, having fallen together with plain plosives. Proto-Hokan *px. is based on the following correspondence: Chi /x/[u, /px/ elsewhere = Sha, Ach, Ser, Sal /px/ = pYum *px [vx] = Kar, Cho /f/ = pPom *p^h = Wsh, Yan, Tol /p^h/ = Ats /ph/. In Sha, pHok *p^h > /h/. This correspondence, though elaborate, seems to point straightforwardly to pHok *px. or *[fx.].

6.2.11. ***f.** Three Hokan branches have a phoneme /f/: Karuk, Seri, and Chontal. Often enough, two or three of these languages agree on /f/ in a given etymon, and they never disagree, except that in Kar and Cho /f/ can also come from *px.. In none of these languages can /f/ derive from pHok plain *p, as least so far as I have been able to see. In Kar and Cho, /f/ does come from pHok *px., so that Kar and Cho cannot be used to reconstruct pHok *f unless *px. can be ruled out. When *px. can be ruled out however, corresponding to /f/ in Ser and Cho we can find /p/, /w/, and /ø/ in Chi; /p/ and /w/ in Sha, Ach, and Sal; and /f, /v/, /h/ in Kar. The conditions for all these reflexes have not been entirely worked out, but the semivowel and zero reflexes seem to correlate with rounded vowels in the neighborhood. I may be somewhat overbold in the total number of pHok etyma in which I have reconstructed *f, but I am quite confident that such a segment must be reconstructed for proto-Hokan. Its phonetic nature may have ranged between voiceless and voiced bilabial spirant. In all other languages but the ones just named, *f falls together with *p. In most Yuman languages, pYum *p has two reflexes, [p] and [v] (actually "beta"). Yumanists have succeeded in deriving all instances of [v] in any Yuman language from either pYum *p or pYum *w. Yet the widespread presence of [v] in Yuman languages suggests that pHok *f > pre-Yuman *[v] before [v] and [p] fell together without actually eliminating either phone from the system. I have assembled 17 etymologies pointing to pHok *f; 3 of them are restricted to in Northern California: *ifu 'to cry, mourn' [N]; *Lif 'lip' [N/S]; *fol^y 'wet' [S]; *fusi 'liver' [N/S]; (a-)l^yafu 'navel' [N/S]; *ifi 'to come' [N/S]; *ifi7 'to grow' [N/S]; *x.anc[^]if 'frog' [NC]; *c[^]uf 'fly, mosquito' [N/S]; *fa:øa 'manzanita' [NC]; *7ú:+fa 'tobacco' [N/S]; Ca=k^wif 'to ask' [S]; *fal 'to fight' [MA]; *fas 'to rub, touch' [N/S]; *fu 'true' [NC]; *af 'to throw, pull' [N/S]; *faø' 'to throw' [N/S].

6.2.12. ***qx..** This correspondence is based on the presence in some languages of reflexes like those for *q^h and in others of reflexes like those for *x.. The languages of the first type are proto-Pomo, Yana, Chimariko, Washu, Seri, and Tol. The languages of the latter type are Karuk, Shasta, Achumawi, Atsugewi, and Salina. But in this latter set of languages in certain etymologies /k/ (as if from *q or *q^h) also appears in some languages and /x/ (as if from *x.) in others, in a seemingly random pattern. These etymologies I have also reconstructed with *qx., with the proviso that they will all be carefully examined until the regular phonological relations are worked out and the undigestible residue that I expect to find is culled out.

All the remarks made above about plain plosives are also true for glottalized and aspirated plosives, to the best of my knowledge.

6.3. **Other correspondences.** The other correspondences are interesting, too, but I lack the time to discuss them at length. I will refer to some of them briefly.

6.3.1. ***č and *c^h** have distinctive reflexes in Chi, Kar, Sha, and Sal. In the remaining languages, these fall together.

6.3.2. ***s and *s^h** have distinctive reflexes in pPom, Chi, Ach, Wsh, Sal, pYum, and Ser. In the remaining languages they fall together.

6.3.3. ***h** merges with *x. in pPom and perhaps Ats. In Yum it changes to /ʃ/ or disappears, sometimes turning into a glide next to high vowels. In some languages its reflexes are not clearly known. In Chi, Yan, Sha, and Ach its reflex is /h/, distinct from that of *x..

6.3.4. **Vowel length** is absent underlyingly from Chi, Cho, Wsh, and Tol. It corresponds reasonably well between the remaining languages that have it, although some instances of /V:/ in particular languages derive from earlier *V7[C and *Vh[C. Considerable refinement is possible here.

6.3.5. **Glottal stop** is phonemic in virtually all Hokan languages, but it has been eliminated from absolute final position in several languages, and from preconsonantal position in many more.

6.3.6. **Vowels.** Although several Hokan languages have only three or four underlying vowels, and some of those that have five or six surface vowels only have three vowel contrasts in unaccented syllables, I find that there are solid correspondences supporting the reconstruction of five vowels to proto-Hokan. While it is conceivable that further work will show that *o and *u were not in contrast, I feel that it is unlikely that pHok could have had fewer than four underlyingly distinct vowels.

6.3.7. **Diphthongs.** clusters of vowel + semivowel are found in virtually all Hokan languages, and the most commonly occurring are /ay/, /aw/, /uy/, and /iw/. I believe that without positing /ey/, /ow/, /oy/, /ew/, /iy/, and /uw/ (that is all the other possible combinations), we cannot plausibly account for all the vowel correspondences among the Hokan languages. Working out the details, however, will take some time. If we need no more than four simple vowels, then the potential diphthongal contrasts /uy/:/oy/, /uw/:/ow/, and /ow/:/aw/ would disappear, providing much more work for /aw/, /uw/, /iw/, and /ew/, and the long diphthongs.

6.4. Phoneme Alternations.

6.4.1. **Consonantal Symbolism.** In the etymologies I have found acceptable, there are numerous instances of multiple or discrepant reflexes among the apical resonants *l, *n, and *r, and among the labial resonants *w and *m. Since alternations among these phonemes (or their reflexes) are found actively in a number of Hokan languages, and lexically frozen in others, I attribute alternation among these phonemes to proto-Hokan. The alternation among apicals seems to be associated mainly with size and respect symbolism, i.e. neutral:small:large, neutral:nice:nasty. Possibly *l is neutral, *n is little/nice, and *r is big/nasty. It does not necessarily follow that all instances of *n and *r exhibit symbolism. *n is an extremely common phoneme. *r is not very common, but I would not expect all of its occurrences to be accountable for by the effects of sound symbolism. I do not so far have a theory about the conditions for alternation among the labials, but *w may be neutral and *m 'little/nice'.

6.4.2. **Vocalic Ablaut.** In otherwise acceptable etymologies, there exist discrepancies among the indicated proto-Hokan vowels of the following three types, the more frequent being cited first in each case: both *a and *o, both *i and *a, both *i and *u. The first case is extremely common, the second less so, and the third very infrequent. In fact *i ~ *u is so rare that I initially rejected certain proposed etymologies involving just two languages precisely because of this discrepancy in their vowels. I expect to be able to add about ten more etymologies now that I have recognized this alternation. These alternations seem to occur mainly in verbs and nouns that plausibly derive from them. Though in a few cases the alternations may be apparent rather than real, and have phonological explanations or require pruning of etymologies in order to eliminate the alternation, in the majority of cases each of the alternating vowels is supported by at least two languages. In fact, when I began to lay out the tentative reconstructions for each etymology, I discovered many instances of what I had treated as separate etymologies to be semantically and phonologically virtually identical except for a discrepancy between *a and *o or between *i and *a. But I had been aware of these alternations earlier. All the cases of *i ~ *u were embedded in what I had presumed to be independent etymologies. When these alternations occur in nouns I intend to scrutinize the data with the hope of finding non-grammatical explanations. In the case of verbs, I hope to develop an explanation that refers to some grammatical function(s), because the alternations are so pervasive that a phonological explanation seem unfeasible. In the reconstructions for each etymology, any case of these alternations is marked *a ~ *o, *i ~ *a or *i ~ *u in square brackets after the basic reconstruction.

It might be thought by some that these alternations are apparent rather than real, and have multiple unrelated causes. I do not believe this to be so. Alternations of the types discovered in the Hokan etymologies are recognized synchronically in Yana, Shasta, and Yuman. No reference to them has so far been found for Karuk, Pomo, Washu, or Salina. Seri, Chontal, and Chimariko have not been examined for possible traces.

Silver (Silver 1966) refers to an alternation in Shasta between /i/ and /a/ that is found in many lexical items and seems to be phonologically conditioned. She symbolizes the alternation as the morphophoneme <î> (p76-77). In the Shasta lexicon are buried vowel alternations of the types **a ~ e**, **a ~ i**, **a ~ u**, and **i ~ u** (p75-76).

In Yuman vowel "ablaut" marking plurality in verbs basically involves lengthening a vowel. However there are two types of cases of qualitative vocalic ablaut. Shaterian (Shaterian 1983.97,141-142) reports **i(:)y ~ u(:)y** for Yavapai, i.e. **i ~ u** before /y/. Langdon (Langdon 1971.156,163) reports just two cases of **i ~ u** symbolic alternation in Ipai and Tipai. She also reports (Langdon 1970.111) an alternation of **aw** and **uw** (in both directions) in the pluralization of some verb stems. Mixco also has some relevant data from Kiliwa that I have not yet tracked down.

In Yana verbs, there is widespread vowel alternation between basic and modified/derived vowel quality to symbolize voice/valency differences. Basic quality is associated with transitive verbs with first and second person object, and intransitive, passive, and imperative verbs. Modified vowel quality is associated with transitive verbs with third person object and with causatives (Sapir 1922.233, Sapir & Swadesh 1960.7-8) as seen in the chart below.

basic quality		modified quality		
phonemic	?morphophonemic	phonemic	?morphophonemic	change
i(:)		e(:)	ai	(+a..)
a(:)		o(:)	au	(+..u)
u(:)		o(:)	au	(+a..)
ai	a:i	ui	u:i	(a > u)
au	a:u	au	a:u	[unchanged]
ui	u:i	ui	u:i	[unchanged]

If we interpret the probably underlying vowel representations we see that

1. syllabic /i/ has an /a/ added to it;
2. syllabic /u/ has an /a/ added to it, or is unchanged;
3. syllabic /a/ has a /u/ added to it, or is changed to /u/.

That is, /i/ takes /a/, /a/ takes /u/; /u/ takes /a/ or nothing.

There is thus in Yana considerable similarity to the postulated proto-Hokan ***a ~ *o** and ***i ~ *a** alternations.

Yuman provides analogues for both the ***a ~ *o** and ***i ~ *u** alternations of pHok.

Shasta provides a morphophonemic analog for the pHok ***i ~ *a** alternation, and frozen analogs for all three of the postulated pHok alternations.

It has not escaped my notice that in the daughter languages discussed here the vowels that alternate are just the three "apex" vowels /i a u/. I am not willing, however, to concede that this suggests that pHok had just three vowels. The languages in question could all have undergone mergers of distinct pHok vowels. The issue is open, though, and I could change my mind.

6.4.3. Fronting/Palatalization. In a sizeable number of etymologies there is multiple or conflicting evidence for the reconstruction of the following pairs of contrasts: *t. and *t, *ç and *c^, *q and *k^y, *s and *s^, *x. and *x^y. In the reconstructions generally the first member of each alternating set is lexically more frequent. My hypothesis is that the second, lexically less frequent, member of each set is derived from the first member by a phonological process of fronting (or palatalization). I do not believe this fronting to be a case of ablaut, but to involve affixation, usually of a derivational/lexical nature (rather than being morphosyntactic). It often affects what seems to be the first consonant of a root, and thus it can function like a prefix. At the historical phonological state we find proto-Hokan in, it does not seem feasible to identify the affix as a preposed or postposed segment /y/, but as our understanding of proto-Hokan develops, it may become feasible. As an interim measure, I will call this feature /J/, order it as a prefix to the consonant it affects, and stipulate that it may represent more than one grammatical category, without being able to say more on the topic at present. I will write the alternations referred to as *(J)t, *(J)c, *(J)k, *(J)s, and *(J)x respectively. I would expect *l and *l^y, *n and *n^y to enter into a parallel set of alternations, but so far instances of these alternations have escaped my attention. From the above formulation, it does not necessarily follow that all instances of *t, *c^ *k^y, *s^, and *x^y contain morpheme boundaries between the two phonological elements, nor is it necessarily entailed that the set of proto-Hokan phonological contrasts should or can be reduced by reanalyzing *t as *Jt, *c^ as *Jc, *k^y as *Jk, *s^ as *Js and *x^y as *Jx. I confess, however, that the idea is attractive. Since *θ has among its reflexes mostly [y], it seems likely that *θ was a palatalized segment (although other possibilities come to mind). There is no palatalized/fronted segment to match *r, unless it were *θ. Both

*f and *θ have voiced as well as voiceless reflexes in one or another language, but *r has no known voiceless reflexes. The idea should be kept in mind in making further refinements of proto-Hokan phonology.

6.4.4. **Multiple Reconstructions.** In a small number of instances, in a given etymology there is evidence for reconstructing more than one phonologically similar proto-Hokan phoneme. Some of the more common types of discrepancy are *plain vs. *glottalized, *plain vs. *aspirated, *aspirated vs. *glottalized, *s vs. *ʃ, *s^ vs. *c^.
These discrepancies will have to be explained. My current view is that they are probably irregularities that will be explained on a case-by-case basis rather than being clues to a more subtle understanding of proto-Hokan phonology, but time will tell.

6.5 Phoneme Distributions (Phonotactics).

C = consonant

V = vowel

H = laryngeal /h ʔ :/

Y = semivowel /w y/

\$ = syllable boundary

I postulate the following basic phonological structure for a proto-Hokan lexical item of one to three syllables that is not a compound:

#([C(x)]V[H])\$C(x/w)V(H)(Y)(C)\$(+CV)

The minimum structure is CV. The C may = /ʔ/

A vowel may be long, or followed by /h/ or /ʔ/, even though another consonant follows in the same syllable.

A word may contain an enclitic (or unstressable) final syllable.

If a word contains two syllables the first may be a prefix.

A syllable-initial plain (not glottalized, not aspirated, and probably not fronted) plosive may be followed by /x./ . This suggests that glottalization and aspiration might be in origin /ʔ/ and /h/ after plosive. However, in the daughter languages glottalized plosives do not seem amenable to a /C + ʔ/ analysis, and for aspirated plosives only Chimariko to my knowledge seems hospitable to a /C + h/ analysis. Nevertheless, between them Silver (1976), Jacobsen (1946, 1976), Talmy, and Moshinsky (1976) have suggested that the aspirated stops of Yana, Washu, Pomo, Atsugewi, and Chimariko have come primarily from consonant clusters (Jacobsen 1976.234-236). It should be noted that I explicitly postulate both aspirated plosives and plosive + /x./ clusters for proto-Hokan, and find them to be in contrast. I would not be disappointed if it were eventually feasible to analyze the pHok aspirated plosives as clusters of plosive + /h/.

A syllable-initial obstruent may apparently be followed by /w/, but there are only two cases where such a reconstruction has seemed unavoidable: #(a)s[^]wa 'fish', and #iHpwa 'tail'. I would rather look forward to more such clusters than to find ways around reconstructing consonant + w. If no more are forthcoming I will consider ways to avoid positing these clusters.

In a very preliminary way, all possible /VY/ and /V:Y/ clusters seem to be required for proto-Hokan to account for the observed vowel +/- semivowel correspondences, but I would look favorably on an effective explanation of pHok *[e:] and *[o:] as underlying /ay/ and /aw/. If, for example, it could be shown that both *[ay] and *[a:y], *[aw] and *[a:w] were not required, and that *[e] and *[o] were correlated with adjacent consonant

qualities and/or the qualities of vowels in near-by syllables, an argument for a three-vowel system with length and all possible V(:)(Y) combinations might begin to seem plausible. See the alternative speculative vowel correspondence chart, above. Shirley Silver and Margaret Langdon have both expressed a preference for such a formulation.

6.6. Stress in Comparative Perspective. A good hypothesis about **stress** eludes me. Most Hokan languages have free stress, but some have predictable stress. Many languages show vowel dropping of syllables that must have been unstressed when they were dropped. I tentatively hypothesize that in proto-Hokan stress could occur on any syllable of a lexical item (except the by definition unstressable enclitics), but I suspect that a deeper understanding of the morphological patterning of proto-Hokan and its evolution in the various daughters might render much of the stress phenomena predictable on a combination of morphological and segmental grounds.

6.7. An Alternative View of Proto-Hokan Phonological Structure. If all the simplifications contemplated in the preceding paragraphs should pan out, we could postulate the following phonological system for proto-Hokan:

P H O N E M E S

c o n s o n a n t s						v o w e l s	
p	t	c	k	k ^w	ʔ	i	u
p'	t'	c'	k'	k ^w '		a	
f	θ	s	x	x ^w	h	length /:/	
	r						
	l						
m	n						
		y		w			

D I S T R I B U T I O N S i n t h e s y l l a b l e

C(h/x/w) (J)V(H) (Y) (C[h/x][J])

(J is the fronting feature which was probably a postposed [or preposed] /y/)

A P O P H O N I C A L T E R N A T I O N S

a ~ u

i ~ a

u ~ i

l ~ n ~ r

w ~ m

7. Comparison with Previous Work.

This will be done more fully in a later study. The job of describing what Sapir and Gursky have done was carried out in 4.1 and 4.3. There is, however, an additional point of reference. Two Soviet scholars, Dimitrij (Dima) Les[^]c[^]iner and Sergej Nikolaev, have made a foray into Hokan territory, and come up with some results. I have met and conferred with Nikolaev in November of 1988. It will be interesting and useful to develop and maintain contact with these scholars.

8. Historical Phonology.

Sizeable portions of the post-*proto-Hokan* historical phonologies of *pPomo*, *Yana*, *Chimariko*, *Karuk*, *Shasta*, *Washu*, *Salina*, *pYuman*, *Seri*, and *Chontal* have been worked out. This will be laid out in a later article. Lack of extensive and/or accurate data have hampered such work on *Achumawi*, *Atsugewi*, *Tol*, *Yemé* (*Comecrudo*), and *Pajalat* (*Coahuilteco*), and these latter languages have had less influence on my developing model of *proto-Hokan* structure than perhaps they should have had. For *Yemé* (*Comecrudo*) and *Pajalat* (*Coahuilteco*) we will have no more data, since they are dead. *Tol*, *Achumawi*, and *Atsugewi* are probably reasonably well documented in the files of one or another linguist, but the published materials leave much to be desired. In general, the poorest understood phenomena involve laryngeals, vowel length, diphthongs, stress, and vowel dropping.

9. Etymologies.

9.1. **Structure of the Etymologies.** It is my plan to create a text containing the cleaned-up etymologies that I have used in arriving at the hypotheses I now operate with. These etymologies will contain the following kinds of information:

- reconstruction with variants and distribution
- gloss(es) of reconstruction
- supporting forms with glosses and comments where appropriate
- cross-references
- reconstructions made by others
- comments
- references to earlier versions of the etymology

In the current version of this study I am unable to provide more than the tentative proto-Hokan reconstructions.

9.2. **Cover Symbols.** In many etymologies the set of languages that the etymon survives in does not allow for complete specificity in the reconstruction. Rather than state all possibilities in such reconstructions, I have devised a set of cover symbols standing for the most frequent specific ambiguous cases, and the reconstructions have been symbolized in those terms. In the instances of ambiguity not covered by these symbols, I have stated the alternative possible reconstructions.

*P = *p or *f
*Y = *y or *θ
*R = *l or *r
*L = *l or *l^y
*N = *n or *n^y
*C = *ç or *c[^]
*T = *t. or *t
*K = *q or *k^y
*S = *S or *s[^]
*X = *x. or *x^y
*I = *i or *e
*U = *u or *o
*X! = *x., *x^y, or *x^w
*K! = *q, *k^y, or *k^w

There are four additional cover symbols that stand for conflicting attestations rather than ambiguity; that is, some languages support one reconstruction, while others support a different reconstruction, but I am not convinced that there was more than one pronunciation of the etymon in proto-Hokan.

*E = there is evidence for both *e and *i
*O = there is evidence for both *o and *u
*A = there is evidence for both *a and *e
*H = there is evidence for *h and/or *ʔ and/or *:

9.3. The Northern California Diffusion Area. Yana, Chimariko, Karuk, Shasta and its close relatives, Achumawi, and Atsugewi are all participants in a linguistic diffusion area known as the Northern California linguistic area, which includes non-Hokan languages as well. These languages share a lot of peculiar local vocabulary and have some morphosyntactic convergences and, no doubt, extensive calquing as well. Although the possible effects of convergence could and has been overstated, there is no reason to deny extensive cross-influences among these languages. On the other hand, there seem to be clear typological differences among sets of these languages on the one hand, and closer connexions likely to be due to genetic closeness on the other. Thus it seems that while Shasta-Okwanchu-Konomihu (Shastan) and Achumawi-Atsugewi (Achuan) are rather closely connected, probably due to a more recent diversification, Yana and Chimariko are not at all close to these or to each other. And Karuk is equally far from Chimariko and Yana, though possibly more closely connected to Shastan-Achuan. Although spoken in what would be considered as geographical Northern California, Washu and Pomo do not belong to the Northern California linguistic diffusion area, nor are they especially closely connected to any of the Hokan languages located within its ambit. It would be rash to automatically attribute any putative Hokan etymology that is found only in Northern California to proto-Hokan; it would be equally rash to assume that all such items owe their existence to diffusion from an extra-Hokan source.

9.4. Number of Etymologies. Except for Chontal, Seri, Yana, Karuk, and several Yuman languages, there are no dictionaries or extensive vocabularies of Hokan languages generally available. Manuscript materials of J. P. Harrington contain extensive lexical materials for Chimariko and Salina, and of course dictionary files for Washu and several Pomo languages exist, but none of these sets of data are easily available. Achumawi is simply not documented in a reliable way, and Atsugewi has not been the object of a project to collect the lexical material. Tol's level of lexical documentation is unclear; in any case no vocabulary is available. Without making too much of all this, since I have extensive lexical materials on a number of languages that I have not yet made available to the public, I would like to point out that there exist a rather large number of valid Hokan etymologies that have been identified, even if not established, by previous scholars. If adequate lexical coverage of the stock were achieved, I believe that the number of etymologies could be increased by at least 50%. At the moment, though I have not made a count, I believe that there are about 600 etymologies that can be attributed to proto-Hokan or a major section of the stock, for example the Northern languages, or the Southern languages. In the list to follow, there are about 1,000 entries. Several sets of them contain what is undoubtedly the same root, and perhaps 150-200 of them belong to the notorious Northern California diffusion area and may not be true Hokan, that is, sub-Hokan, etymologies. But these issues have to be worked out on a case-by-case basis.

9.5. On Polysyllabic Reconstructions. If straightforward phonological comparison leads to the reconstruction of lexemes of more than two syllables, I think that it is appropriate to appeal to the following heuristic: Lexemes of three or more syllables are probably (a) morphemically complex, (b) borrowed, (c) "morphemized", or (d) invented. That is, monosyllabic and disyllabic morphemes are to be expected, tri- and multisyllabic morphemes are not. Many of the reconstructions of Sapir and Gursky have three syllables, and many of Haas's reconstructions have more than three syllables. A theory of Hokan word structure must be devised to account for and enable us to decompose multisyllabic reconstructions that seem otherwise valid. In the absence of such an analytic and explanatory framework, multisyllabic reconstructions remain suspect and in limbo.

9.6. Proto-Hokan Grammar. I have practically everything to learn about the grammar of contemporary Hokan languages, though I have glimmerings of understanding of Chimariko and Paipai. Sapir 1917 and 1925 and Gursky 1966b provide helpful insights and bright ideas. The contribution of Gursky to comparative Hokan studies is in my view quite valuable and probably not given as much attention as it merits. I was amazed at the number of undoubtedly valid grammatical comparisons found in Gursky 1966b. Although his scope of comparison was broader than just Hokan, the Hokan data can be examined by itself.

9.7. Gursky's Hokan Etymologies. The work of K-H Gursky in assembling likely Hokan lexical cognate sets (especially Gursky 1974) deserves the highest praise also. Even though he used all the previously published work of other scholars, he has found much that is new, he has judiciously split apart sets that were unlikely in the first place, and has brought all this together in the compass of two or three major articles.

9.8. Problems in the Hokan Data. In the comparative work of some Hokanists the material compared has been phonologically inaccurate or not analyzed morphologically. For example, I was unaware that much of the material from Seri and Chontal cited by Grey, Campbell, and Gursky was not given in their lexically basic stem forms, but with inflexional material still stuck on. When I referred to the Seri and Chontal dictionaries, and the additional grammatical forms provided for each lexical item, I was able to extract the lexical stem in most cases. I was led to do this because initial and final segments and segment strings of the Seri and Chontal words were not showing phonological correspondence in many cases. We are still basically in the dark about the morphology and phonology of both Achumawi and Atsugewi. BUT: in the tentative reconstructions I have made for the Hokan etymologies that I have accepted, there is a great deal of morphological structure, both inflexional and derivational. Noun prefixes for possessed and absolute states, valency marking prefixes on verbs, instrumental prepositions, and a sizable number of noun-noun compounds are all to be found. A variety of derivational suffixes on verbs and several on nouns as well will no doubt become apparent as the data is pored over. For the moment some of the insights I have garnered are referred to here and there in the

list of tentatively reconstructed forms that makes up the next section.

9.9. Layout of the Appendix/Reconstructions. In the listing of tentative proto-Hokan and sub-*proto-Hokan* reconstructions that follows, grammatical morphemes are given first. They are ordered according to their function, and the labeled ordering can be read in such a way as to infer particular grammatical formulas for various word classes. While not explicitly stated, I believe these grammatical formulas to be at least plausible, and quite probably for the most part viable. Grammatical morphemes are followed by lexical morphemes, in two lists. First are listed those morphemes that empirically form parts of semantic networks such that there has been considerable shifting in their meanings. Morphemes that do not form parts of shifting semantic networks are given in a second list alphabetically ordered by the English glosses. An index would obviously be desirable, but would take considerable space. An index will be provided for any revised version of this study.

TENTATIVE
PROTO-HOKAN
RECONSTRUCTIONS

This section is a listing, by semantic field and semantic network, of undoubted as well as plausible Hokan etymologies. Each etymology is keyed/referred to by a preliminary reconstruction preceded by # (rather than the standard * which implies a mature reconstruction with near total accountability). The tentative reconstructions offered here are potentially faulty in three ways: [a] the cognate sets (God forbid) are not genuine; [b] the lexical items compared have not been segmented properly; [c] the phenomena of stress and length have not yet been fully worked out. While many of the reconstructions will have to be modified as a result of further work, a considerable number will stand unchanged. If the languages that an etymon survives in do not have aspirated or glottalized consonants a note [**?glott/asp**] follows the reconstruction. If the languages that an etymon survives in do not have aspirated consonants a note [**?asp**] follows the reconstruction. Boundary symbols used in the reconstructions are = between members of compounds or to mark off preponds and postponds, + to mark off clitics, and / to specify alternative single segments only. Alternative phoneme sequences are specified on both sides of ~. Affixes are marked off by -. Note that in these reconstructions **C** stands for 'either *ç or *c^', while **V** has its standard meaning of 'some vowel'.

In this preliminary listing supporting forms and references to the etymological literature are left out.

The layout of the list for each entry is as follows: reconstructed form, ablaut or other phonological alternations, grammatical category where not guessable, glosses (that cover the range of attested reflexes), distribution within the stock. Codes for distribution are NC = Northern California (Chimariko, Yana, Karuk, Shasta-Okwanchu-Konomihu, Achumawi-Atsugewi), Coast = Central California Coast (Salina, Esalen), N = Northern languages (any of the previous languages and/or Pomo, Washu), SW = Southwest (Yuman-Cochimi, Seri), TM = Texas and Northeast Mexico (Pajalat [Coahuilteco], Yeméan-Yué [Comecrudoan-Cotoname]), MA = MesoAmerica (Chontal, Tol), S = Southern languages (any of the non-Northern languages). Any item found in at least two Hokan branches (all of which have just been named here) is included, even though further study may suggest it owes its presence to pre-Columbian diffusion.

OUTLINE OF ETYMOLOGIES

Grammatical Morphemes

- person markers, first and second person
- (deictic) demonstratives
- generic demonstratives and affixed noun markers
- noun derivation
- noun inflexion
- adjective suffixes
- pluralizers
- location and direction
 - location in general
 - incorporated directionals
 - locative adverbs
- verb complex (morphosyntax)
 - second inflexional prefix position
 - first inflexional prefix position
 - verb stem
 - shifters
 - valency changer
 - andative
 - first inflexional suffix position
 - second inflexional suffix position
 - third inflexional suffix position
 - other elements in the verb phrase
- verb derivation
 - verb derivational prefixes
 - instrumental prepounds
 - verb derivational suffixes
- interrogatives
- negatives
- miscellaneous syntactic markers
- quantifiers

Lexical Morphemes

- body parts and their actions
 - the body in general
 - head and hair
 - eyes
 - ears
 - neck and joints
 - mouth and lungs
 - feet
 - innards and privates
- actions and states
 - sitting and staying
 - going and coming
 - giving, taking, and bringing
 - lying down, dying/killing, and hitting
 - breaking, cutting, piercing, and shooting

wood, fire, and heat
earth
sky, high places, and weather
kin
size
animals
 mammals
 birds
 creepers
 fishes
 shelled critters
 bugs
plants
 trees
 herbs, grasses, and vines
 roots and tubers
 thorns
 mushrooms
colors

Alphabetically Ordered Remnant

GRAMMATICAL MORPHEMES

PERSON MARKERS, FIRST AND SECOND PERSON

#ZERO 'third person' [N/S]
#ha 'third person pronoun (marker)' [N/S]
#mi ~ #ma 'second person pronoun marker' [N/S]
#n^yi [i ~ a] 'second person singular pronoun marker' [N/S]
#n^ya [gen] ~ #n^yi [N] 'first person singular pronoun marker' [N/S]
#c^v [č ~ c[^]] 'first person singular pronoun marker' [N/S]
#Ha 'first person singular/plural pronoun marker (exclusive?)' [N/S]
#l^ye 'first person singular/plural pronoun marker' [N/S]
#KV 'first person plural pronoun marker (inclusive?)' [N/S]
#q^hv 'second person plural pronoun marker' (same as #KV?) [N]
#ma free particle 'reciprocal; reflexive (+/- possessive)'
(< #mak^y' ~ #ma(L) 'back' and/or #mat 'body') [[N/S]

(DEICTIC) DEMONSTRATIVES

#i 1. 'this' [N];
2. 'first person singular pronoun marker' [NC]
#sV 1. *demonstrative;
2. 'first person singular pronoun marker' [NC+TM];
'present tense marker' [N/S]
#Ti 1. *demonstrative;
2. 'first person singular/plural pronoun marker' [N/S].
#ya 1. 'this; here' [N/S];
2. 'first person singular/plural pronoun marker (exclusive?)' [N/S]
#wa ~ #wi 1. 'this; here' [N/S];
2. 'first person singular/plural pronoun marker' [N]
#mE 'this' [N/S]
#(h)U 1. 'yon' [N/S];
2. 'third person pronoun (marker)' [N/S]
#qa ~ #qi 'weak demonstrative' [N/S]

GENERIC DEMONSTRATIVES AND AFFIXED NOUN MARKERS

#7a:- 1. 'absolute of intimately possessed noun' [S];
2. 'substance or mass noun prefix' [N/S].
1. and 2. are possibly different ways of looking at the same thing.

#Hi:- 1. 'body-part prefix' [N/S];
2. 'possessed state of intimately possessed noun' [N/S].
1. and 2. are possibly different ways of looking at the same thing.
I refer to this marker as the part-possession marker.

#k^{wh}i- 1. 'indefinite third person (+/- possessive)' [N/S];
2. 'absolute noun prefix' [N/S];
3. 'derivational noun prefix' [S]

#p'- 1. 'absolute(?) noun prefix' [N];
'derivational noun prefix' [N]

#p^h(a)- 'adjective prefix' [N/S]

#p(a)- 'adjective prefix' [N/?S]

(All three of the above morphemes are etymologically distinct and also distinct from #pA [a ~ i] 'demonstrative' [N/S])

#t.- 1. 'proclitic article' [N];
2. 'absolute noun prefix' [N];
3. 'derivational noun prefix' [N]

#t.(a)- 'adjective prefix' [N]

These two are probably distinct from #ta 'demonstrative' [N/S]

#l^y- 1. 'proclitic count noun article' [S];
2. absolute noun prefix [N];
3. derivational noun prefix [N]

#l- 1. proclitic mass/plural noun article [S];
2. absolute noun prefix;
3. derivational noun prefix [N]

#La 1. '*demonstrative';
2. third person singular/plural pronoun marker [N/S]

#c^- derivational (?) noun prefix [N/S]

#C^h- derivational noun prefix [N/?S]

#s^hi- derivational (?) noun prefix [N/S]

#-l^y derivational noun suffix [N/S]

#-Na absolutive noun suffix [N]. Could be the same as the following item.

#n^{ya} 'demonstrative: location unspecified' [N/S]

Certain Hokan demonstrative particles become absolutive suffixes in Karuk and Esalen: #ta, #pA, and #sa.

#pA ~ #pi 1. weak demonstrative [S];
2. definite article [N];
3. > absolutive suffix in Kar, Esa.

#ta 1. weak demonstrative [N/S];
2. third person pronoun marker [N/S];
3. definite article [N];
4. > absolutive suffix in Kar, Esa.

#sa 1. 'yon' [S];
2. > absolutive suffix in Kar, Esa;
3. #s 'first person singular pronoun marker' [N/S];
#si 'present/future tense' [N/S].
This item was already referred to above.

#hE 1. weak demonstrative [N];
2. definite article [N];
3. > absolutive suffix in Yahi.

NOUN DERIVATION

#-cⁱ 'diminutive noun' [N/S]

#-La [?*l^y] 'diminutive noun' [N]

#+7θa 'female noun' [NC]

#-yaw 'verb --> noun' [N]

#-u: 'verb --> noun' [S]

NOUN INFLEXION

(Locative case markers are specified elsewhere)

- #-K 'same subject' [S]
- #-m 'different subject' [S]
- #+(7)a 'vocative' [N/S]

ADJECTIVE SUFFIXES

- #-k^y 'adjective suffix' [N/S]
- #-aRa 'noun --> adjective' [NC]

PLURALIZERS (especially of nominals)

- #K 'plural pronoun marker; noun plural marker' (mostly postposed) [N/S]
- #-s⁽ⁱ⁾ 'dual and plural of noun/pronoun' [N]
- #-wi [i ~ a] 'dual and plural of noun/pronoun/demonstrative' [N]
- #-l^ye 'plural of noun/adjective/stative' [N/S]
- #n 'floating pluralizer' [N/S]

LOCATION AND DIRECTION

Some of the items listed here are known to be morphemically complex, and several of the items of CVCV shape are probably composite.

LOCATION IN GENERAL

- #mina 'back; behind' [NC]
- #iT^{hi} 'down; bottom' [N/S]

INCORPORATED DIRECTIONALS

For a priori (or cross-linguistic typological) reasons I believe most of these markers are in origin incorporated verbs of movement.

- #=(7)uL [l ~ n] 'down' [NC]
- #=Ri 'up' [N]
- #=c^a [a ~ o] 'up' [N/S] (weak set)
- #=ema 'into' [NC]
- #=ta 'out' [NC]
- #=low 'apart, out' [NC]
- #=wV [w ~ m] 'thither, towards there' [N/S]
- #-uk^y 'hither' [N/S]
- #=PiL [p ~ p'] 'here and there' [N]
- #=KaL 'into one's mouth' [N]

LOCATIVE ADVERBS

These items are often based on nouns that refer to parts of things, and sometimes have traces of their nominal origin, or indeed nominal nature, in the presence of the part-possession prefix *Hi:-.

LOCATIVE ADVERBS that become preverbs in Eastern Pomo and/or incorporated directionals in Northern California

- #Ca adv/dir 'away' [N]
- #sa [s ~ s^] adv/dir 'through' [N]
- #mi(y) [i ~ a] adv/dir 'to the side' [N/S]
- #ma(L) [l ~ n] adv/dir 'back; after' [N/S] (< '*back')
- #(i)yow adv/dir 'down' [N/S] (#i is *Hi:-)
- #ri adv/dir 'down' [N]
- #=taN [t ~ t.] adv/dir 'down' [NC]
- #=KuLV [l ~ n] adv/dir 'into' [NC]

#px.uLu [l ~ n] or #fuLu adv/dir 'into the house' [NC]. The former accounts for Chi, Kar. The latter accounts for Yan, Ach, ?Kar. It does not seem feasible to combine all these. Perhaps #x^wuLu would account for all of them, but *x^w is not known to occur before rounded vowels.

LOCATIVE CASE SUFFIXES

#-lu [l ~ n] loc case 'by means of (instrument)' [N]

#-awA [a ~ o] loc case 'from' [N]

#-a loc case 'at' [N]

#-l^y(a) loc case 'in(to)' [N/S]

#-s^a [a ~ o] loc case '(with)in' [N]

LOCATIVE ADVERBS that become locative case suffixes in some languages (Yum, Kar, Wsh) and prepositions in others (Sal, Yan)

#Ki adv/case/prep 'at' [N/S]

#x.aK'a adv/case 'together' [N]

#(i)mE adv/case 'out (from); away (from)' [N/S] (#i is *Hi:-)

#aypV [?glott/asp] adv/case 'away' [N/S]

LOCATIVE ADVERBS that become locative case suffixes in some languages (Pom), incorporated directionals in others (Wsh, Kar), and either/both in still others (Yan, Yum)

#+(i)ma *adv/case/dir 'with (instrument and accompaniment)' [N/S] (#i is *Hi:-)

#+yey *adv/case/dir 'with, by means of' [N] (?#y₁ = *Hi:-)

#+yV *adv/case/dir 'in' [N/S] (?#y = *Hi:-)

#Iwi [i ~ a] adv/case/dir 'on (top), above' [N]. Related to words for '*mountain'.

#K'a adv/case/dir 'near' [N/S]

#K'a(m) adv/case/dir 'toward, hither' [N]

#+an [n ~ l] *adv/case/dir 'toward' [N]

#ma adv/case/dir 'thither, there, elsewhere' [N/S]

VERB COMPLEX (MORPHOSYNTAX)

Markers are cited in order of occurrence from left to right. Other features of structure that have been worked out are not specified here.

#n^ya free particle 'when, while, after' [N/S]

#(i)n^y(i)+ subordinator [N/S]

SECOND INFLEXIONAL PREFIX POSITION

#Ka- 'imperative/future' [N/S]. This is related to

#Kam free preposed particle 'future' [S]

FIRST INFLEXIONAL PREFIX POSITION

#Pa- [ʔglott/asp] 'plural (human) object' [S]

#m- 'plural verb' [N]

VERB STEM

The verb stem can consist of a verb root +/- incorporated 'instrumental' prepounds or causativizer +/- incorporated directional postpounds. It can consist of a noun + verbalizer.

It is not clear whether there is evidence for simple noun incorporation or verb root compounding.

SHIFTERS

#-i7i [i₂ ~ a] 'infinitive' [N/S]

#-t.A 'agentive' [N/S]

VALENCY CHANGER

#-p [ʔasp] 'passive' [N/S]

ANDATIVE

#-Tu 'go and VERB' [N]

#-iL [i ~ a] 'go and VERB' [N]

FIRST INFLEXIONAL SUFFIX POSITION

- #-la 'imperative' [N/S]
- #-i 'present/imperative' [N] (= demonstrative #i 'this/here')
- #-s(i) 'present/future/same time' [N/S]
(= demonstrative #si 'this/here'. See #s 'first person')
- #-x^yA [x^y ~ x.x] 'future/optative' [N/S]
- #-a 'past/aorist' [N]
- #-aT' 'completive' [N/S]
- #-nI [ʔn ~ l] 'remote past' [N]
- #-p^hi [i ~ a] (*p^h or *px.) 'hypothetical/if' [N]
- #-ta 'desiderative/polite imperative' [N/S]

SECOND INFLEXIONAL SUFFIX POSITION

- #-l^ye 'conditional/would' [N/S]
- #-k^yi (function unclear: seems to have many developments;
completive/past/preterit is the most common) [N/S]

THIRD POSTPOSED (ENCLITIC) POSITION

- #+n 'imperative enclitic' [N]
- #+ma 'customary' [N]
- #+(a)yu 'again/repeated/habitual' [N/S]

OTHER ELEMENTS IN THE VERB PHRASE

- #Hipa free particle 'in the past' [N]

VERB DERIVATION

VERB DERIVATIONAL PREFIXES

#m(a)- `stative/static (adjective/intransitive)' [N/S]

#qV- `stative/static (intransitive/adjective)' [N/S]

#sV- `transitive (causative) [N/S] (weak set)

#a:- `instrumental/causative' [SW]

#K- `instrumental/causative [SW ?+Wsh]

#pa- `transitive/active' [N/S]
(this may be an instrumental prepound)

#ta= `causative' [N/S] (= tv *'to make, do')

INSTRUMENTAL PREPOUNDS are seemingly recruited mostly from noun and verb roots. They are found in most of the Northern languages and Yuman, but apparently not in the rest of the Southern languages. A more thorough analysis of the lexicons of the Southern languages other than Yuman on the lines of Haas's and Hinkson's work on Karuk might uncover evidence of instrumental prepounds. The cognate instrumental prepounds that I have noted are scattered throughout the lexical comparisons. They are also assembled here.

#Pa= `with the mouth' [N/?S] (< *'to say; shout').
cf. Cho **pa-lay** `to speak' (pHok #Ley `to speak').

#k^ya= `by speech' [N/S] `by speech' (< *'to speak, talk')

#k^ya=now `to talk; tell' [N/S]

#qa= [Chi q'] `by biting/chewing, with teeth/jaws' [N]
(< *'to bite')

#c̣a= [ç ~ c^] `with the mouth/teeth' [N/S] (< *'to bite')

#px.u= `by blowing' [N] (< *'to blow')

#mi= ~ #ma= `with the foot' [N] (< *'foot')

#pew= `with the foot' [N] (< *'foot')

#is= `with the hand' [N/S] (< *'to take, hold, bring')

#tu= `with the hand' [N]. Not derived from any known noun or verb root.

VERB DERIVATIONAL SUFFIXES

#-a: numeral --> verb 'to do X times' [SW]

#-(h)i noun --> verb 'to do X' [N]

#-ni 'adjectival; durative/intransitive/static' [N]

INTERROGATIVES

#ma '*person; who?' [N/S]. See #tama 'man; people'

#am ~ #aw '*something; who?; what?' [S/?N] (?same as #ma)

#(a)c^hi 'thing; what?' [N/S]

#Lu [l ~ n] 'where?' [N/S] (fairly weak set)

#k^ya 'general interrogative' [N/S];

#k^yi 'general interrogative' [N]

#Ku 'general interrogative' [N] (=? *k^yu)

#x^ya [a ~ o] 'general interrogative' [N/S] (fairly weak set)

#-n 'interrogative suffix (?on verbs)' [N/S]

NEGATIVES

- #ma: 'negative' [N/S]
 #k^{yh}u(wa) 'negative' [N/S]
 #(a)x.u 'negative' [N/S]
 #sey 'negative' [N/S]
 #T'V 'negative' [N/S] (weak set)
 #pa [a ~ o] 'negative' [NC ?+Yum]

MISCELLANEOUS SYNTACTIC MARKERS

- #Ka 'perhaps' [MA]
 #+k^{yh}(i) 'emphasis (especially with pronouns)' [N]
 #+pa 'emphasis' [N/S]
 #itá 'and' [N]

QUANTIFIERS

- #(xi)Pu 'first' [N/S]
 #s^e 'one' [N/S]
 #pey 'one' [N/S]
 #p^ha 'one; only; alone' [N/S]
 #k^y'a 'one' [N]
 #(q-)x.ow(a) 'two' [Pom, Esa, Tol]
 #haq^hu 'two' [Ach, Ats, Cho]
 #(q-)x.ow=háq^hu [a ~ o] compound 'two' [Chi, Sha, Yum].
 Contracted to #(q)x.aq^hu in Kar, Sal.
 #x.a [a ~ o] 'first half of three' [N]
 #ma 'second half of three' [N]
 #Xó múk^y'a 'three' [N/S]. (?#Xo = *x.a ~ *x.o; ?#k^y'a = '*one')

#ap=Xa 'three' [S]. (#Xa = *x.a ~ *x.o)
 #lAP 'three' [Coast]
 #tow 'to count [Kar]; four [Yan, EPom]; five [Kar]' [N]
 #em+a 'five' [N]
 #sUy "subtract one" [SW]
 #la7(a)wa 'little, few' [MA]
 #+k^yu 'a little; just' [NC]

LEXICAL MORPHEMES

In the list that follows the lexical etymologies are listed according to semantic connections between them that appear in the glosses of the descendant forms. Another reason for some of the collocations can be that certain Hokan comparativists have united in a single etymology forms that I have found to belong to more than one etymology. My files consist of xerox copies of all comparative Hokan studies snipped and taped to 5x8" cards. Until I copy out on new cards the precise set of forms that constitute each correct etymology I cannot reorder my files in a more rational way.

BODY PARTS AND THEIR ACTIONS

THE BODY IN GENERAL

Note that many body part names begin in #i-, or #a-, or both. #i- probably = *Hi:- 'possessed state of intimately possessed noun', and #a- probably = *7a:- 'absolute state of intimately possessed noun' and/or 'substance/mass', but in some of the descendant languages these morphemes may no longer be segmentable.

When verbs of at least two syllables begin with both #i and #a this is likely to reflect valency-specifying or other derivational prefixes whose values have not yet been determined. In a few cases ablaut may be involved. Not all polysyllabic verbs that begin with a vowel necessarily contain a derivational prefix. Of course diachronic vowel assimilations may have operated to give the impression of either greater diversity or greater simplicity than was actually the case in proto-Hokan. When the historical phonology is better worked out, some of these uncertainties can be resolved.

#aLa 'person, tribe; husband' [N];
 NC: 'to sit, live, stay'

#tama 'man; people' [N/S]

#ewE `deer' [N/S]

#a:7 `deer' [N]

#ipá `deer; ?body [Pom; s^- noun prefix] [N/S]

#ipów [?a > o] `doe; elk' [N]

#[i/a]pa `person; man; husband; kinsman; ?body
[Pom; s^- noun prefix] [N/S]

#ipa `to be alive; be there' [S]. ?Same as the previous item?

#[i/a]px.a `person, people, tribe, race' [N]. The relation of
this form to #[i/a]pa `person' cannot at present be explained.

#apí `meat' [MA]

#(h)i:-s^i `meat, flesh; body' [N/S];
NC also `person, Indian; man, male, husband'

#i:-s^ey `skin; blanket' [N]. This may be related to the previous
item.

#[u/i]pa=s^i compound `meat, flesh; body'
(= *"person body/flesh") [N]

#(i)maHt. [?asp] `meat', `flesh; body' [N/S]; Yum `reflexive'

#Ac^i `center, middle' [NC]

#i-maK [?glott/asp] `middle' [S].
May be related to the next item.

#(i)mak^y `back' [N/S]; Pom `reciprocal'

#ma(L) `back' [N].
This item is related to the previous one.

#mina `back; behind' [NC].
May be related to the previous two or three items by i ~ a ablaut.

#síl^y(i) `behind, rear' [N/S]

#as^(i) [?s^ ~ s] `back' [N/S]

#LiK `back' [S]

#(i-)Suw [w ~ m] `backbone' [NC]

#Tim `edge; side' [NC]

HEAD AND HAIR

#wesyu [w ~ m] `horn' [N]. *sy > Chi /s^/, Wsh /s/, Kar //s//, Yan /:y/. This may be a compound. No other consonant + **y** clusters have been reconstructed at the beginning of a syllable.

#emV `horn' [S] (pTol *c^heme, Yem [yemó];
Tol c^h- = pHok noun prefix *C^h-;
cf. pPom *c^h]imé `body hair, fur').

#i-k^{wh}a+yV `horn; bird's topknot, crest' [N/S]

#al `forehead' [N/S] (Cho -pali)

#ul^y `forehead' [N/S] (pYum *mpu:l^y)

#piL [l ~ n] `forehead' [?glott/asp] [N/S]

#iLe `forehead; up(wards)' [N].

This item is probably related to the previous item, the previous item possibly containing a prefixed noun classifier or old prepond meaning something like `head'. The same element may appear in the Cho and pYum items for `forehead' cited above.

#q'ula [*q' or *k^w] `brains' [N]

#p^ha `brains' [N/S] (weak set)

#ut'a `head; brains' [N]

#x^yaLaw `brains; head' [NC]

##(i-)La(x^w) or ##(i-)La(x.u) [l ~ n] `head' [N]

#x^wa `head' [S]

#x.u `head; head hair' [N].
?Ablaut variant of previous item?

##(ya)x.u [a ~ o] `nose' [N/S]

#fi or #px.i `nose' [N/S]

#yam `nose' [NC]

#i:Li [l ~ n] 'snot; phlegm; nose; glands in throat; to blow nose' [N]

#(i-)La [l ~ n] 'nose; snot' [N/S].

These two forms can be united as #Li [i ~ a; l ~ n]

#x.el^ye(T) 'hair; head' [N/S]

#(k^{wh})aHwal^y 'bark; skin' [N/S].

Contains pHok *k^{wh}i- 'impersonal/indefinite possessor'

#pi 'to skin; skin' [N/S]

#i-7Iy 'head; hair; fur' [N/S]

#q'uwow 'hair' [N/S]

#to 'feather' [NC]

#imI 'body hair, fur; feather; skin' [N/S]

#i-má(y) 'sinew; root; body hair; head hair' [N/S].

These two items may be ablaut variants of each other.

#i-pa (i-)ma(y) phrase or compound 'sinew'
(= *"deer sinew") [N/S]

#sama [s ~ s^h] 'root (+ sinew)' [N/S]

#ac^hi [c^h ~ c^h] 'root' [N]

EYES

#as^há [*s^h or *x^y] 'eye' [Ach, Esa:N]

*C^hiw 'eye' [Yan, Ach:NC]

#wiy 'eye' [N/S]

#(e)wíy [i ~ a] 'to look (for, at)' [N/S]

#[u/i]-θíw 'eye; face' [N/S]

#θiw=x.a7 [x. ~ x^y] compound 'tears' (= *"eye water")

#7u 'to see' [SW ?+Cho 'eye']

#imá 'to see; look; find' [N/S]

#ma(s) [s ~ s^h; a ~ o] 'face; forehead' [N].
?Same root as previous item?

#iTí 'to look' [NC]

#aP 'to look for' [NC]

#miC'i 'to blink' [NC]

EARS

#k^weyá 'to hear' [N/S]

#Tew 'ear; to hear' [N]

#[i/a]-ma-l^y(-Ku) [l^y ~ n^y] 'ear; to hear'
[Yum has noun prefix *s^hi-]

#i-sa 'ear' [Sha, Ach, Ser:N/S]

#i-sa-má 'ear' [N/S].

This may be a compound of the previous two roots.

NECK AND JOINTS

#q'o(y) 'neck; throat; to swallow' [N/S]

#ni 'throat' [Sal, Ach:N]

OR: #niK' ~ #nuK' 'throat; to swallow' [Sal, Cho:N/S]

#ti 'shoulder' [N]

#[i:/u]-pu(K) 'nape; neck; shoulder; arm'

#mi(y)=puK [i ~ a] compound 'knee; thigh'
(= *"foot neck") [N/S]

#p^ha 'strong' [NC]

#Pam [ʔasp] 'arm; hands' [NC]

#px.aL `shoulder; arm; knee' [N/S]

#p^huruC'i `knee' [NC].
 This item and the previous item may be related through *a ~ *o ablaut.

#moqHo [q^h ~ q'] `knee' [N]

#..tul [l ~ n] `joint; knee' [N/S]

#pAǂa [ʔasp] `knee; leg'

MOUTH AND LUNGS

#ax. `to yawn' [N/S]

#Tams.. [s ~ ǂ] `to yawn'

#(a-)ha `mouth' [N/S]

#(a)ha `to open mouth; yawn' [NC]

#(h)a:wa `mouth' [N]

#ap^hu `mouth' [NC]

#=KaL incorp dir `into one's mouth'

#pa [a ~ o] `to shout, holler, call; speak, say' [N/S]

#Pa= incorp prepound `with the mouth' [N/?S]

#ifu `to cry; mourn' [N]

#wa [a ~ o] `to cry' [N/S]

#wo&wo `to bark' [N/S] (?= *'to cry' + reduplication)

#waǂ `to shout' [NC]

#x.a `to weep, cry' [N/S]

#mi `to weep, cry, shout' [N/S]

#qow `to shout' [N/S]

#(a:)si [s ~ s^h] 'name; to name' [N/S]

#(o)si [s ~ s^h] 'to count' [S].

This item may be related to the preceding and following items.

#isi 'to say' [N]

#(i)t.i [t. ~ t.^h] 'to say, tell' [N]

#á7i 'to speak; say' [N/S]

#ik^y'a [a ~ o] 'to say; talk' [N]

#kwa [a ~ o] 'to talk; say' [S]

#Ney 'to say, tell' [N/S]

#Ley 'to speak' [S].

These two are probably the same root #Ley [L ~ N]

#k^ya 'to speak, talk; by speech (incorp prepound)' [N/S]

#k^ya=now 'to talk; tell' [N/S]

#ya(:) 'to speak; tell' [N].

#yaN 'throat' [N/S]

#CHan [C^h ~ C'] 'to speechify' [N]

#Lif 'lip' [N/S]

#ipawa 'tongue' [NC].

This is a replacement of the following item.

#[i/a]-pál^y [l^y ~ n^y] 'tongue' [N/S]

#pel^y [l^y ~ n^y] 'to lick'.

It is likely that these two items are related.

#hen 'to lick' [NC]

#Pal [p ~ p'] 'cheek'

#s^u7 'chest; breast' [N]

#óó' 'breast' [MA]

#s^{hi}7l^{ya} [a ~ o] 'breast(s); milk' [N]

#i^hi [N/S] ~ #u^hi [NC] 'breast; milk'

#[i/a]i^hi(ç) [ç ~ c^h] [ʔasp; probably *ç^h] 'to suck'. [N/S]
 This item is probably related to the previous item.

#(p)x.u(y) 'to whistle' [N/S]

#x.u 'to blow' [N]

#(i)px.ú 'to blow' [N/S]

 #px.u= incorp prepound 'by blowing' [N]

 #px.us^h 'to blow' [N/S]

All the immediately preceding items containing the sequence /x.u/ are probably related.

#p^husu:(l) [s ~ s^h] 'to blow' [N/S]

#[U/a]-pis 'to suck, smoke; tobacco, cigaret, pipe' [N/S]

#isa [s ~ s^h] 'to breathe; sigh' [N] (weak)

#(a-/?mi-)sa:k^y(=i(T)) 'rib; lungs' [N/S]

#pa:ra+wi 'ribs' [N/S]

#s^ha [s^h ~ s] 'rib' [S/?N]

#i/a-sí [s ~ s^h] 'to drink' [N/S] (Yan, Sha, Ats /c/ due to influence of word for 'water' and perhaps also 'to suck')

#imé7 'to drink' [N/S]

#l^yuH 'to drink; sip' [N/S]

#a:-x^yá7 'water' [N/S]

 #i-x^ya7 'juice' [N/S]

 #θiw=x.a7 [x. ~ x^y] compound 'tears' (= *"eye water") [N/S]

 #Xá7+la 'damp, wet' [N/S]

#fol^y 'wet' [S]

#yuH `to vomit; spit' [N/S]

#yuHq `to vomit' [N/S]

#qx.et' `to spit' [N]

#hay `to spit (out)' [NC]

FEET

#i-mí `foot; with the foot (incorp instrument)' [N/S]

#ma(y) `foot, footstep, track; with the foot
(incorp instrument) [N]

#x^ya-ma `foot, footstep, track' [N]

All three of these can be united as #mi [i ~ a]

#mi:=wil^y [l^y ~ n^y] compound `thigh' [N/S] (= *"foot belly")

#yo=wi(l^y) ?compound `thigh' [N/S] (?= *"X belly")

#LaL [l ~ n] `foot' [NC]

#pew [Chi /ph/] `foot; with the foot (incorp instrument); to step'
[N/S].

#Ku [*q or *k^w] `leg, foot' [N/S]

#sey `foot, leg' [N]

#Pa.. `hips' [N]

INNARDS AND PRIVATES

#(i:-)px.u(y) `fat, grease' [N/S]

#éya `liver' [S]

#fusi `liver' [N/S].

Yum *[civusí:] contains pHok noun prefix *c^{^-}.

#c^{^-}-eya=fusi compound `liver' [Sha, Okw:NC]

#uwa `liver' [Ach:NC]

#uwa=fusi compound `liver' [Ats, Kar:NC]

#ima `liver; heart' [N].

#mas^ [a ~ o] `heart' [N/S]

#saHmaH [s ~ s^] `heart'.

This item and the preceding two items may all have a root in common. This item should also be compared to the following item, and may be a compound.

#(X)ása(L) [á ~ o; l ~ n] `heart' [N/S]

#i-waHy ~ #yaHy `heart' [N/S]. cf. #uwa `liver'.

#iC-wa(:y) [ç ~ c^] `chest' [NC]

#Cuqu(N) [n ~ l] `heart' [N].

Either the *C or the *q, but not both, may be glottalized]

#(7)qUw(L) [ʔu ~ a] `belly; guts' [N/S].

This may be related to the previous and following items.

#[i/u]q^há `belly' [N].

This may be related to the previous two items.

#(a-)l^yafu [l^y ~ n^y; a₁ ~ o] `navel' [N/S]

#i-7ip `navel' [N/S]

#wil^y `belly; groin' [N/S]

#mi:=wil^y compound `thigh' [N/S] (= *"foot belly")

#yo=wi(l^y) ?compound `thigh' [N/S] (?= *"X belly")

#[I/a]-t.u `belly, stomach; navel; guts' [N/S]

#PiN `belly' [N]

#(i-)p^het. `to fart; skunk' [N]

#p^hIs^ `to fart; skunk' [N/S].

(pYum *[v]sí[t.] may be a blend of these two,
or #p^het. may be a contraction of pHok *p^hiset.

#p^hi.. `to fart' [NC].

All three of these items are related.

#i-px.a 'guts' [N/S]
 #a-px.a 'shit' [N/S]
 #waqx. 'to shit' [N/S]
 #(i-)c^ére(q) [r ~ l ~ n] '(to) shit; dirt(y)' [N/S]
 #p^hil^y [i ~ a] 'dirty' [N/S]
 #c^aq 'ugly, nasty' [N/S]
 #ala(y) 'ugly, bad' [N/S]
 #s^i '(hot like) chile' [S]
 #ik^y'a(y) [a ~ o] 'bitter, sour' [N/S]
 OR: #q'ay [a ~ o] 'bitter, sour' [NC]
 #k^{wh}a 'bitter' [N/S]
 #(C-)ax.a 'gall' [NC].
 Contains pHok noun prefix *c^-.
 #(k^y-)ax.xa 'bitter' [N/S]
 #q^ha 'egg' [N/S]
 #yaqol^y 'ballocks' [N]
 #sul^y 'ballock; penis' [N/S]
 #Si 'penis' [NC]
 #i/a-pEs [s ~ s^] 'vagina' [N/S]
 #wiç [i ~ a] 'vulva' [NC]
 #wey 'vagina' [N/S]
 #wi 'buttocks' [N/S]
 The previous three items may all be related to each other.
 #pi 'buttocks' [S]. cf. Paj /pi:/ 'fornication'.
 #[i/a]-px.u 'buttocks' [NC]
 #mAL 'sexual organs' [TM]

#(h)uɕ(a) 'to fuck' [NC]
#su [s ~ ɕ] 'to piss' [N/S]
#iHpwa 'tail' [N/S]
#[i/a]-p'uL [l ~ n] 'tail' [N]

ACTIONS AND STATES

SITTING AND STAYING

#θu 'to be' [N/S]
#(a)ɕi [ʔasp] [ɕ ~ c^] 'to be (singular inanimate); sit' [N]
#i:KeL 'to sit (singular), be' [N]
#(i)na 'to sit (animate dual), live, be' [N]
#Lu 'to sit (plural), dwell' [N]
#c^u 'to sit, dwell, lie on ground' [NC]
#K'uHLA [l ~ n] 'to sit (singular), stay, dwell' [NC]
#(a)k^ya 'to sit' [N]
 #aH-k^ya [a ~ o] 'house' [N/S]
#(i/a-)wa 'to sit' [N/S]
 #a/i:-wá 'house' [N/S] (pPom 'door' goes here)
#aHma 'house; to sit, dwell, (be a)live' [N/?S].
This might contain the same root as the previous item(s),
with **w** ~ **m** ablaut.
#x.u(l^y) 'door' [*x. or *h] 'door' [MA]

GOING AND COMING

#(a)wá 'to walk, go, come' [N/S]

#aho: 'to walk, run' [NC]

#iyá 'to go' [N/S]

#ha 'to go' [N/S]

*p^hi [*p^h or *px.] 'to go' [N]

#(i)ni 'to go' [N/S]

#i7pa [i ~ a] 'to arrive' [N/S].
This could be written #i/a-7pa.

#ifi 'to come' [N/S]

#iyú: 'to come' [N/S]

GIVING, TAKING, AND BRINGING

#ey 'to give' [S]

#awi [ʔi ~ a] 'to give' [NC]

#[a/i]qa [a ~ i] 'to give' [N/S]

#(i-)p-áy [a ~ o] 'to carry'. [N/S].
Contains the p^{Hok} transitivity prefix *p-.

#(i)k^yɿ 'to carry' [N/S]

#áHKa 'to carry in hand/on back' [N].

These two may be united as #k^yi [i ~ a] if Ach has /k/ rather than the reported /q/. Under the same conditions this item might be combined with the following item, with deviant glottalization in Cho. Perhaps all three should be kept separate. These two items should also be compared to #qi ~ #qa 'to give'. The difference between 'carry' and 'give' is palatalization or its absence.

#k^y'a [a ~ o] 'to carry' [S]

#aP(u) 'to carry' [N]

#ul^y 'to carry a long object' [N/S]
 #Ila 'to carry' [NC]. See #iL 'to do with the hand'.
 #aL 'to fetch; go and VERB' [NC]
 #yow 'to take, get' [N/S]
 #is [s ~ s[^]] 'to take, hold, bring; with the hand (incorporated
 prepound)' [N/S]
 #mu:T 'to hand' [NC]
 #[i/a]mu 'to hold, take, carry' [NC]
 #imí 'to bring' [S/?N]

The previous three items may reflect a common root with the as yet poorly supported *i ~ *u ablaut.

#ma 'to bring, carry; hold, have' [N/?S]
 #ma [a ~ o] 'to give' [S]
 #ma(n) 'hand (arm, elbow, finger)' [N/S]

The previous four items may reflect a common root with #mi ~ #ma ablaut.

#iL '(to do with the) hand' [NC]. See #Ila 'to carry'.
 #nol^y 'hand; to grasp' [S]
 #i-ta(l^y) [*t ~ *t.; l^y ~ n^y] 'hand; arm; shoulder'
 #ta(n) 'leaf' [N].
 This seems to be a special use of the previous item.
 #i-s[^]ál^y 'arm; wing; shoulder' [N/S]

LYING DOWN, DYING/KILLING, AND HITTING

#man 'to fall' [N/S]
 #me 'to fall' [S]
 #p^hey 'to fall; lie' [N]
 #mi(:) 'to lie down' [N]. May be related to #man 'to fall'.

#(a)Pá(:) 'to lie down; put; fall; throw' [N/S]
 #Pat 'to lie down; sit' [N/S]

#Po7 'to sleep' [N/S].
 May go with either #Pa 'to lie down'
 or #Pa ~ #Po 'to die'.

#[a/i]simá [s ~ s^] 'to sleep' [N/S].
 In NC a variant #i^hima [m ~ w] is found.

#imí [i ~ a] 'to sleep'.
 ?Same root as previous item? cf. #mi(:) 'to lie down'.

#wI 'sleepy(ness)' [N/S]

#AX '(to be) sick; (to feel) pain' [N]

#Pa 'to be sick; die' [N/S]

#Po 'to die; dead' [NC].
 This is probably an *a ~ *o ablaut variant of the previous item.

#puy ~ #piy 'to die; dead' [S].
 It is hard to avoid seeing a connexion between this item and the previous two.

#q'aLa 'to die; dead' [Pom, Kar:N]
 OR: #q'A [Pom, Kar, Chi:N]
 OR: #KaLa [Kar, Tol:N/S]

#yum 'dead' [NC]

#ma 'to die; dead' [N/S]
 #maT=Xa ?compound 'to be thirsty' [SW] (?< *"to die water")
 #[i/a]ma 1.'to kill'; 2.'to hunt; fish'.
 The latter glosses may go with #imá 'to see; look; find'

#[i/u]maL 'to strike, hit' [NC/?+Sal].
 ?Same root as 'to kill' above?
 If not, add Sal /s^me:l'/ and specify [a ~ i] ablaut.

#K'u 'to kill' [N/S]

#toLi [l ~ n] 'to strike, beat; kill' [N]

BREAKING, CUTTING, PIERCING, and SHOOTING

#x^yáHk^wa 'flint; arrowpoint; knife' [N/S]

#(a)sá:K'a 'obsidian (?+ flint)' [N]

#(a:)K'ow [w ~ m] 'to sever, cut off; chop' [N]

#wow 'to cut' [NC]

#T'aP 'to split' [N/S]

#PIs [s ~ s[^]] 'to cut; split; [i ~ a] kill' [N]

#tak^{yh} 'to separate, split, tear' [N/S]

#C'u 'to cut, break' [N]

#q^ha(w) 'to break; cut' [N/S]

#Xaw 'to break, cut' [N/S] [weak set].

Perhaps these two items should be combined as #qx.aw or #(q)x.aw.

#X!aw [w ~ m] 'to crush' [NC].

This item should probably be combined with the previous two.

#LIw 'to press, mash; pet, stroke' [N]

#Law 'to grind (with pestle).

These two items should probably be combined as #Liw [i ~ a].

#les [s ~ s[^]] 'to smash, grind, crush' [N/S]

#c^ha 'to mash, pound into mush' [NC]

#pi 'to pound' [N/S]

#(a)pIy 'stone' [MA]

#[a/i-]píH 'bone; egg; ballock' [N/S]

#[i/a]-x^yá7 'stone' [N/S]

#x^yá7=PI(y) [x^y ~ x.x] compound 'mortar, metate; stone'
(*< "stone pound" or "stone stone"*)

#i(H)θa 'bone' [N/S]
 #a(:)K [K ~ K'] 'bone' [N/S]
 #K^hÁl^ye 'bone' [S]
 #[i/a/u]-lax^w [a ~ o] 'nails; claw' [N/S]
 #(i-)p^hiH 'nail, finger- or toe-' [N]
 #x.eC' 'to scrape with claws; claw' [N]
 #k^w'a 'to scratch' [N/S]
 #x^wal^y [a ~ o] 'to scratch [; grind, pound] [N/S]
 #(T)aXas [s ~ s^h; a₂ ~ i] 'to scrape; scratch' [SW/?+Kar].
 (?causative prepound pHok *ta=)
 #acex.i [asp] 'to scratch' [NC]
 #LaP [l ~ n] 'to slap; hit' [N/S]
 #La7t [l ~ n; a ~ o] 'to mash, scrape, split, crack' [N]
 #Lam 'to mash; bedrock mortar' [N/S]
 #c^huL [l ~ n] 'to grind (with pestle) [NC]
 #ik^ya 'to grind; pestle; pounding basket' [N/S]
 #wa: 'to grind; pound' [N/S]
 #[a/i]ta [a ~ o] 'to grind [*a]; pound [*o] [N/S]
 #to 'to remove, take off' [weak set] [N]
 #as^h 'corn gruel' [S]
 #qx.ar 'to chip' [N/S]
 #7ihi 'to shell acorns' [NC]
 #C'al 'to break, split, squeeze, wring' [N/S]
 #qaP 'to split; break with teeth' [N/S]

#kʷat [a ~ o] 'to cut; break; bite' [N/S]

#qa [Chi qʷ] 'to bite; by biting, with the teeth (incorp prepound)' [N/S]

#ǰa [ǰ ~ cʰ] 'to bite; with the mouth/teeth (incorp prepound)' [N/S]

#uǰ'i 'to chew' [NC]

#[í/a]-θa(w) [ʔa ~ o] 'tooth' [N/S]

#i-7ǰow [ǰ ~ cʰ] 'tooth' [NC]. cf. pTol *wiǰ 'tooth' < *í7ǰow ?

#7ǰowa(:K) [ǰ ~ cʰ] 'jaw; chin' [NC]

#qawa 'jaw; chin' [N]

#qʷusa '*joint: elbow; jaw, chin'

#pʰi 'to pierce and separate; burst, snap' [N]

#qiK 'to jab; nudge, crack' [N/S]

#s^a 'to move a long object lengthwise; sting, pierce, stab, poke hole' [N/S]

#sa 'arrow' [NC]

#Xa 'bamboo; reed' [S]

#Xá=s^a compound 'arrow; reed' [S] (= *"reed arrow")

We can combine the NC and S forms as #sa ~ #s^a 'arrow'. This shares a common root with #s^a 'to pierce'.

#Cu 'to poke, pierce, spear; spear arrow, needle' [N/S] (pPom *cʷ)

#Cʷoq 'to stab' [N]

#LUmi 'spear' [NC]

#ip(H)u [p ~ pʷ ~ pʰ] 'to sting; stab; awl' [NC]

#si 'thorn; to pierce; awl, nail' [N/S]

#na 'to hit; kill'; + 'to stab (Cho)' [S]

#k^ya [a ~ o] 'to shoot' [N/S]
 #isL.. [l ~ n] 'to shoot' [NC]
 #pa 'to hit'; + 'to break (Cho)' [N/S]
 #(u)Pak^{yh} [a ~ i] 'to hit, strike' [N/S]
 #PaN 'pestle, mortar' [Coast]
 #PaK 'to burst; cut' [N/S]
 #PaT 'to break, crack; poke; shoot' [N/S]
 #PáL(a) 'to push, knock; shoot' [N]
 #Pax.xu 'bow' [Coast]

At least some of the above forms beginning in *Pa.. must contain a common root. cf. the words meaning 'to wash' in the alphabetical list.

#x.ak^y' 'bow' [N/S]
 #x.op'u 'bow' [N/S]
 #Pu7o 'to shoot; hunt' [N]
 #(a)t.'íK 'to kill'; + 'to shoot (Sal)' [N]

#t.'eK [Sal] ~ #t.eK' [Cho] 'to cut'.
 This item is related to or should be joined with the previous item.

WOOD, FIRE, AND HEAT

#ipá 'tree, stick; arrow; classifier/postpound in tree names'
 #i-7íy 'tree, wood' [N/S]
 #(a-)x.áy 'tree' [N/S]
 #=l^yI 'plant/tree postpound'
 #ax^ya 'cottonwood'
 #IXa[w] 'willow' [SW ?+Cho *7e:x 'wood']
 #a-Hów or #a-Háw [a ~ o] 'fire; (fire)wood; to make a fire' [N/S]
 #iyu 'to catch fire; fire' [N]

#ArUy 'hot' [N/S]
 #l^yap' 'hot; to burn, start a fire' [S]
 #Tu 'hot; to be burnt; burn' [N/S]
 #iNi [i ~ a] 'hot; to burn'
 #(i)pI(K') 'to burn; be ripe, cooked' [N/S]
 #ipé 'day' [N/S]
 #pil^y [i ~ a] '(to be) hot, warm; heat; to heat; burn' [N/S]
 #ap^hey 'ashes' [N/S]
 #ma 'to burn' [N/S]; NC +nominalizer: 'ashes'
 #i-ma 'fire; heat' [NC]
 #ma(H) 'ripe, cooked; to ripen, be cooked' [N/S]
 #maq' 'to roast' [NC]
 #muHt' 'to cook; roast' [N].
 May contain an ablaut variant of #ma(H).
 #s^hil^y [l^y ~ n^y] 'to roast' [SW]
 #p^ha 'to bake' [N/S]
 #ax^wa 'smoke' [N/S]
 #x.owK 'coal' [NC]

EARTH

#Xul^y 'dry' [S]
 #k^y'ar 'dry' [N]
 #aHma(t.') 'earth' [N/S]
 #s^hiqx.o7 'earth' [N]
 #yax. [a ~ o] 'earth; dirt; sand' [NC]

#Tap [ʔasp] 'dust, flour' [NC]

#t'a 'dust, dirt' [N]

#T'as [a ~ i; s ~ ɕ] 'sand' [NC].

These two items may be related.

#pot. 'to shatter/scatter; mud; dust' [N/S]

SKY, HIGH PLACES, AND WEATHER

#al7a 'sun' or 'asterism' [N/S]

#q'ara 'moon' [N]

#a/i-n^ya 'sun; day' [N/S]

#c^h'uwaR 'sun' [NC]

#(a)mu 'star' [N]

#x^yamu ?compound 'star' [N/S]. (?= *x^ya=mu "water star")

#..s^a.. 'star' [N/S].

This is probably the same as the following item.

#s^a 'clear, shining' [N/S]. See #ma-sa, etc. 'white' [N/S].

#is^a(X!) 'sun; day' [N/S].

This is probably derived from the former item.

#asi [s ~ s^h] 'sun; day' [N]

#ipé 'day' [N/S]

#(a)x^ya7 'morning, daylight' [N]

#alayi 'dawn' [N/S]

#x^ya7=alayi compound 'to be daylight' [Yan:NC]
 (= *"morning dwan")

#(h)aw(a) '(to) dawn' [MA]

#uT 'to light, shine' [N]

#mic^h [i ~ a] [ʔglott/asp] 'to shine' [NC]

#c^h'aqx 'shining' [NC]

#la.. 'to shine; glitter; gleam' [N/S]
 #[a/i]meto '(to) thunder; lightning' [N/S]
 #maq' [a ~ o] 'thunder' [N/S]
 #(a)naH 'to thunder' [S]
 #NuL [n ~ l] 'to thunder' [NC]
 #x^yač' [a ~ o; x^y ~ x.x] 'cold [*a]; winter [*u]' [N/S]
 #ásce [sč ~ s^hc^h] 'cold'.
 This may be a compound, since sibilant + plosive clusters do not normally begin a syllable.
 #mAtU [t ~ t^h] 'cold; to freeze' [N]
 #q'iw 'cold; to freeze' [N]
 #iyiw 'snow, ice; cold, cool' [N/S]
 #Tih(e) [i ~ a] 'snow' [N]
 #p^hač 'snow; rain' [N/S]
 #ipá: 'cloud; rain' [N/S]
 #[a/i]k^{wh}ey 'rain; cloud' [N/S]
 #(i)tak^y 'rain' [NC]
 #sa 'fog' [N/S]
 #č'iPu [ʔasp] 'fog' [N]
 #K'aw 'hail' [N]
 #(I)wi 'mountain; top; on' [N/S]
 #(h)awa [a₂ ~ o] 'mountain; top; on' [N/S].
 These two items may be ablaut variants of each other, combinable as #wi [i ~ a].
 #ma 'to climb, (go) up' [N]
 #ema7(y) [a ~ o] 'sky; up; above' [N/S].
 This item may be derived from the previous one.

#paL 'to rise up' [NC]

#[a/i]pa(lʸ) 'top; sky/above' [N/S].

This and the previous item probably have a common root.

#tam 'to arise, get up; above' [N/S]

#Ki 'to lift, raise; get up' [N]

#uɕiɕ ~ iɕuɕ [ʔasp] 'to arise; lift' [NC]

#al 'to climb' [N/S]

#K'ah 'upstream' [NC]

#ULU 'downriver' [NC]

KIN

#Taqa [ʔasp] 'relatives' [NC]

#:a:)t'u(n) 'brother' [N]

#Péyu 'brother' [N/S]

#7ap^ho 'brother' [NC]

#c^a [ʔasp] 'brother' [NC]

#Ka:c^a 'elder brother' [SW].

These two items may be related.

#aLi 'brother, male cousin' [NC]

#wala 'wife's brother' [NC]

#[a/i]c^i [ʔasp] 'sister' [N]

#pi 'sister' [N/S].

cf. #Péyu 'brother';

cf. #api 'father's sister'.

#TaL 'sister' [S]

#isa 'elder sister' [N/S]

#..aq 'younger sister' [N/S]

#awa 'husband; man; person' [NC]

#7ay [ʔi ~ a] 'father' [N/S]
 #[i/a]Ka 'father' [N]
 #ic^hi 'father' [NC]. (Yan /c^h/, Chi /c^h/)
 #tat(a) 'father' [N/S]. Symbolic and widespread.
 #pa 'father' [N/S]. Symbolic and widespread.
 #mam 'father' [TM]. Common in Meso-America.
 #(a:)Ko(wi7) 'father; male; older male (relative)' [N/S].
 See #(a)KU 'long, tall, big; old'
 #Ku7u 'older female (relative)' [N/S]
 #(a)ni 'mother' [N/S]
 #at.xE 'mother' [N]
 #+70a 'female' [N]
 #ta [a ~ o] 'mother'
 #ta 'woman; female' [N/S]
 #imátV ?compound 'woman; mother; female breast; milk' [N/S].
 Probably ends in #ta.
 #mari 'woman' [NC]
 #ma 'mother; breast; milk' [S]. Symbolic and widespread.
 #mamO [a ~ o] 'woman; female' [N/S].
 This and the previous three items probably have a common root.
 #qe 'woman' [S]
 #luwA [w ~ m] 'wife' [N/S]
 #[i/a]Pa:(wV) 'father's father' [N/S]. See #pa 'father'
 #[a/i]ma:(wV) 'father's mother' [N/S]. See #ma 'mother'
 #k^ya:(wV) 'mother's mother' [N/S]
 #k^wa:(wV) 'mother's father' [N/S]

#(a)Cu(wV) 'parent's mother = grandmother' [NC]
 #ta7 'parent's brother = uncle' [N]. See #tat(a) 'father'
 #ewi 'father's brother' [N/S]
 #muta ~ #muC'i 'parent's sister = aunt' [N/S]
 #api 'father's sister' [S]. See #pi 'sister'
 #s^e: [s^ ~ s] 'mother's sister' [N/S]
 #t.^hu 'mother's sister' [N]
 #t.^huL 'old' [N].

These two items have a common root.

#wima 'in-law' [N]
 #-ami- 'child's spouse's parent = co-parent-in-law' [N]
 #mak^y'u 'uncle; nephew/niece; parent-in-law' [N]

SIZE

#pané 'large, big' [S]
 #(i)ça 'large' [N]
 #Ch^iL 'big' [N/S]. (Yan c^h; Cho c ~ c')
 #(i)c^hu(L) [l ~ n] 'long, tall, far, deep; big' [NC].

These two items may be related through the weakly attested **i ~ u** ablaut.

#K'ul^y 'to climb; arise; lift' [N/S]
 #k^yo:(y) 'to grow' [N/S]
 #(a)KU [?*k^y] [k ~ k'] 'long, tall; big' [N/S]
 #k^yul^y 'tall, high, deep' [S]
 #Kur 'far, distant' [S]
 #aqol^y 'long' [N/S]

Several of the preceding six items may have a common root, especially the middle four.

#qam 'big, large; long, tall, far' [N/S]
 #p^how 'far; beyond' [N]
 #pa^ʔ [a ~ o] [ʔasp] 'wide, broad; far' [N/S]
 #wa 'long; large' [NC]
 #To 'long, tall; far' [S]
 #tan 'many, much' [NC]
 #taK 'great; plural' [N/S]
 #ta: 'lots; big' [NC]

All four of the above items may have a common root, and the last three certainly do.

#aTaXu 'many' [S].
 This may go with the previous three or four items.

#t.^hay 'much, many; big' [N/S]
 #Pa:-t.^hay singular [N/S] (*pa- adjective prefix)
 #pe(L) ~ #pa(l^y) 'much, many, numerous; all'
 #ifi7 'to grow' [N/S] [weak set]
 #k^yu(m) 'all' [N]
 #pu 'all' [N/S]

#-c^hi 'diminutive suffix' [N]
 #c^hi 'small' [S]
 #qiC'i 'little, small' [N/S]
 #isil^y [s ~ s^h] 'narrow; thin; little' [N/S]
 #Ku7Su 'narrow' [S]
 #7ur 'short; small' [N/S]
 #qu [q ~ k^y; k^y ~ k^{y'}] 'small, little, young; son, daughter; baby, infant'
 [N/S]
 #qawi 'small; baby; child; boy; girl' [N]
 #ala [a₁ ~ o] 'child; small' [N]
 #(u)wa(y) 'child; offspring' [S]
 #x^yaC' (in^y) 'girl' [N/S]
 #x.ic^h [ʔglott/asp] 'girl' [N/S].

These two items may share a common root.

ANIMALS

In this section particularly there are many items showing sound symbolism and imitation, irregular phonological relationships, and similarities with forms in non-Hokan languages. The mere fact of similarity between Hokan and non-Hokan languages, while indicating diffusion, does not entail that Hokan languages were the recipients, hence such forms are not excluded. In future, specific items may be excluded on a case-by-case basis, for valid reasons. Irregular phonological relationships, if not explainable through symbolism or analogy, are obstacles to an etymology's validity.

MAMMALS

#pu 'bear' [N]
 #ima 'bear' [N/S]. (pPom *l-, Coc t- noun prefixes)
 #mux^wa 'badger; porcupine' [N/S]
 #qx.asc^hiB 'porcupine (quills)' [NC]. Irregular phonology.
 #x.assE 'otter' [NC]

#wan `weasel' [NC]
 #wI `coyote' [N/S]
 #mayc^'V `coyote' [N]
 #c^hi `dog' [N/S]
 #(a)pVrax. `fox' [Kar:NC + Yum]
 #ha:w `fox' [Chi:NC + Yum]. Also found outside Hoka.
 #(a)pVrax.=ha:w compound `fox' [Yum:SW]
 #tu `fox' [N]
 #q^huw(a[n/w]) `fox; lynx; dog' [N/S]
 #n^yam `bobcat (wild cat); cougar (mountain lion)' [N/S]
 #talom `wild cat' [N]
 #x^iyU `wild cat' [MA]
 #Kul^y [l^y ~ n^y] `jackrabbit' [N/S]
 #he `jackrabbit' [N/S]
 #(a)ma `rabbit' [N]
 #x.ol^y7a [x. ~ x^y] `rabbit' [N/S]
 #he=ma=x.ol^y7a compound `jackrabbit' [Chi]
 (= *"hare rabbit rabbit")
 #apxar `cottontail' [SW]
 #numi `rabbit' [N]
 #a^hey `squirrel' [N/S]
 #qali `squirrel' [N]
 #wisila `chipmunk' [NC]
 #muqiq' ~ #muq'aq `mole; gopher' [N]
 #maL [l ~ n] `gopher; rock squirrel' [NC]
 #x.aLas `gopher' [NC]

#amI 'gopher; ?coati' [N/S]

#pEyam 'agouti; coati' [MA]

#máqil^y 'rat' [N/S]

Probably originally 'mouse'; rats are an Old World import.

#XaBa 'rat' [N]. Irregular phonology.

Probably originally 'mouse'; rats are an Old World import.

#p'usaL [s ~ s[^]] 'mouse'

#c[^]em.. [c[^] ~ c^{^^}] 'bat'. Also found outside Hokan.

BIRDS

Bird names are especially subject to sound symbolism world-wide.

#c^{^^}iy 'bird' [N/S]

#(a)c[^]uwi 'bird' [NC]

#c^{^^}ipay 'eagle; bird' [S]

#s[^]a 'eagle' [N/S]

#awic[^]a 'golden eagle' [NC] (Chi c[^]-, Ach l- noun prefixes)

#c[^]upx.a 'bald eagle' [NC]

#emaL 'bald eagle' [NC]

#sVk^{wil^y} [i ~ a] 'hawk' [N/S]

#c[^]uKc[^]u(K) 'fish hawk' [NC]

#c[^]iqx.c[^]i(qx.) [c[^] ~ c^{^^}] 'fish hawk' [N].

These two items are relatable through **i ~ u** ablaut; sound symbolism is also involved.

#Liq'Liq', etc. [l ~ n] 'sparrowhawk'.

Forms like this are widespread in Meso-America.

#C(')V7ur or #7Cur 'hawk; condor' [N/S]

#hus[^] 'buzzard'. Widespread and symbolic.

#óíHk^yuli 'owl' [N]. Though symbolic may show regular phonology.

#an^yá [n^y ~ l^y] 'crow; black (Yum)' [N/S]
 #q(x.)a:q 'crow' [N/S]. Widespread and symbolic.
 #ç'ewaL [ç' ~ c^'] 'bluejay' [N]
 #t.aq' 'woodpecker' [N]
 #c^'Am 'woodpecker' [N]
 #c^'uratu or #c^'urata [a₂ ~ o] 'woodpecker' [NC]
 #KurAT 'woodpecker' [NC].
 These two items seem to have an irregular relation to each other,
 probably via symbolism.
 #c^iTa [ʔglott/asp] 'magpie' [NC]
 #ç'ikpapka(k) 'robin' [NC]. Symbolic; may have originally been
 conventionalized as *ç'ik^wak^wa, then reshaped. Also found outside Hokan.
 #ç'o:q' [ç' ~ c^'] 'yellowhammer' [NC].
 #ti:L [l ~ n] 'killdeer' [N]. Symbolic and widespread.
 #p'uc^'i(N) 'hummingbird' [NC]
 #(l)alaq, etc. 'goose' [N/S]. Widespread and presumably symbolic.
 #taLawax. ~ #tawax.aL 'crane' [N]
 #q'at.'q'at.' 'crane; duck' [N]. Symbolic.
 #qaLa 'duck' [NC]
 #ç'aTaTa 'kingfisher' [N]. Also found outside Hokan.
 #s^aqá:qa '(valley) quail' [N]. Symbolic.
 #t.aKaKa [t. ~ t.'] '(valley) quail'. Symbolic.
 #k^y'uho '(mountain) quail' [N]
 #qx.úmVli 'quail' [Coast]. Symbolic.
 #Tu 'turkey' [S]. Forms like this are widespread in Meso-America.

CREEPERS

- #(wa)t.aK' 'frog' [N/S]. Also found outside Hokan.
 #x.anc^if 'frog' [NC]. Possibly a compound.
 #qoto 'frog; tadpole' [N]. Also found outside Hokan.
 #c^iwu [w ~ m] 'lizard' [NC]
 #úyVLV 'lizard sp.' [N]. Symbolic.
 #ep.. 'iguana' [S]
 #Vwi 'snake' [SW]
 #(q)x.owa 'rattlesnake' [NC]
 #mi/aK..i 'rattlesnake' [N]. Irregular phonology.
 #wisi (?~ #(w)usi) 'rattlesnake; to rattle' [N/S].
 May show **i** ~ **u** ablaut.
 #(q)hap'i[C/T] 'turtle' [N/S]
 #ax^ya nal^y phrase/compound 'turtle; gourd, rattle' [N/S]
 (= *"water X")

FISHES

- #(a)s^wá 'fish' [N]
 #c^i 'fish' [SW]
 #KaL [k ~ k'] 'fish; trout; eel' [N]
 #TaLi 'salmon' [N]
 #VsKáK [a ~ o] 'salmon' [NC]. May be a compound.
 #maL [l ~ n] 'salmon trout' [N]
 #[a/i]c^(V)wu:n [w ~ m] 'dog salmon' [NC]
 #c^amU(l^y) [c^ ~ s^] 'suckerfish' [N]
 #Cim 'whale' [N]. Also found outside Hokan.

SHELLED CRITTERS

#čar [č ~ s] 'mussel' [NC]
 #c^ax. 'mussel' [NC]
 #paKa [a₁ ~ o] GLOSS? [NC]
 #aC^ho 'snail' [MA]
 #x.a(n)c^u 'crawfish' [NC]. May be a compound.

BUGS

#k^wel^ya '*bug sp.' [MA] [weak semantics]
 #c^'iwa=ips(iT) compound 'ant' [N]
 #l^yaP [ʔglott/asp] 'butterfly' [N/S]
 #p^haLóLo 'butterfly; bat' [N]. Symbolic.
 #apoL [l ~ n] [ʔglott/asp] 'cocoon' [NC]
 #č'ata [ʔa₂ ~ o] 'grasshopper' [NC]
 #Cew 'grasshopper' [NC]
 #K'i7ú 'yellowjacket' [NC]
 #mum 'fly' [N]. Also found outside Hokan.
 #c^uf 'fly; mosquito' [NC]
 #sa7mU^y 'fly; mosquito' [N/S]
 #silimu ~ #č'imilu 'fly; flea' [NC + SW]. Symbolic.
 #ime+l^ya 'flea; louse' [N/S]. ʔ+l^ya = diminutive?
 #7il^y 'louse; flea; [N/S]
 #iK'ey 'flea; louse' [N]
 #ac^'i 'louse; flea' [N/S]
 #č'in 'tick; louse; nit' [N/S].

These two items may contain the same root.

#aHk^wi 'louse' [N/S]

#pél^ya 'worm; flea/louse' [N/S]. ?+l^ya diminutive?

#(a)pi 'worm' [N/S]

#p'éLa 'slug'. ?+l^ya diminutive?

These three items may all be related.

#mO.. 'worm; centipede' [MA]

#amTaB 'earthworm' [NC]. Irregular phonology.
May be a compound containing *'earth' as the first member.

PLANTS

#p^hA 'leaf' [N/?+Cho]

#t.'a(L) 'leaf' [N]

#La [a ~ o] 'leaf' [MA]

#x^yan [x^y ~ x.] 'leaf' [NC]

#[i/a]pa [ʔasp] 'flower' [S]

#(a)paq [ʔasp] 'to bloom' [S]

#iso 'seed; fruit; sperm' [N/S]. Probably has pHok prefix *Hi:-.

#yiç 'seed; fruit' [SW]

TREES

#(a)mu 'log' [N]. cf. #mu 'to lie down'.

#yu:w 'log' [w ~ m] [NC]

#ax^ya 'cottonwood' [N/S]

#sa `pine sp.' [NC]
 #(is=)iwi(l^y) [w ~ m; l^y ~ n^y] `yellow pine, etc.' [N/S]
 #asu [ʔa ~ o] `yellow pine, etc.' [NC]
 #c^hu7 [c^x. ~ c[']] `pine' [N]
 #CHaL `digger pine' [NC]
 #ac^how `sugar pine' [NC]
 #Pu `pine nut' [N/S]
 #k^yHo [k^yx. ~ k^y'] `pine nut' [N/S]
 #hu `pine nut' [N]
 #hu:=si compound `pine needle/cone' [N] (= * pine.nut X")
 #naqx. `cedar' [NC]
 #Tah [*x. or *h] `fir' [NC]
 #(i)Pá `juniper' [NC]
 #C'imC'im `spruce' [NC]
 #mal^y `acorn' [N]
 #yu `acorn; oak' [N]
 #k^yh^uL `white oak' [N]
 #TaK' `black oak' [NC]
 #k^wap `oak sp.' [N/S]
 #wey `oak sp.' [N]
 #wey=yu compound `acorn' [N] (= *"oak.sp acorn")
 #p'o:L [l ~ n] `chokecherry, wild cherry' [NC]
 #pat(Ku) `wild plum' [NC]
 #yOn `buckeye' [NC]. also found outside Hoka.

#p'as^á7 'buckeye' [N]

#p'aHa 'pinole' [S].

These two items may be connected, since the buckeye has eatable parts.

#fa:ça 'manzanita' [NC]

#pat.táqx. 'manzanita' [N/S]

#Baha 'green manzanita' [NC]. Irregular phonology.

#Pahe 'pepperwood, peppernut (California laurel)' [N]

#waç [ç ~ s] 'madrone' [NC]

#IXa[w] 'willow' [SW ? + Cho *7e:x 'wood']

#wat 'willow' [N]

#Pac^h^u 'willow' [NC]

#Pas [ʔasp] 'willow' [N]

HERBS, GRASSES, AND VINES

#sO 'clover' [N]

#paT 'clover sp.' [NC]

#x^yaCa 'grass' [N/S]

#qx.atsi(r) 'grass; hay' [NC]. May be a compound.
Cf. previous item.

#ma:x.a 'white grass' [NC]

#ma:k^ya [a: ~ o:] 'grass sp.' [N]

#K'uhiL [l ~ n] 'nettle' [NC]

#x.an^y 'onion' [N/S]

#s^im 'pigweed; panic grass' [SW]

#7ú:+fa or #7ú:+ha(+pi) and/or #7ú:+fa+pi [a ~ o] 'tobacco' [N/S]

#(t.-)x.apil^y 'cattail, tule' [N/S]. (*t.- noun prefix)

#x.aL [a ~ o] 'tule' [N]

#x.am `squash' [SW]

#K'aC'i `wild grapes' [NC]

#sel^y `plant sp.' [SW] [very doubtful]

#so `bower, ramada' [S]

ROOTS AND TUBERS

#c^{al}^y `wild potato' [N/S]

#san [a ~ o] `wild potato (edible root)' [NC]

#q^hawel [*q^h or *qx.] `wild potato; sweet manioc' [N/S]

#7aP `soaproot' [N/S]

THORNS

#(i)t.át [a ~ o] `thorn (spear, stinger, quill)' [N/S]

#(a)súL `string' [N]

#nul^y `maguey (fiber)' [MA]

#(a)mál^y `agave; biznaga' [S]

#(7)u:l^y `cactus sp' [SW]

#7a-ma `yucca' [SW]

MUSHROOMS

#c^{al}^yLuK [l ~ n] `mushroom sp.'

COLORS

#(P-)isⁱw [ʔglott/asp] `raw; green; to heal, recover' [N/S]
 (*pa- or *p^ha- adjective prefix)

#(x^y)as^úy `raw, unripe; green/blue; alive' [N/S].

These two items could be related through **i ~ a** and **i ~ u** ablaut.

#(m)ásu [s ~ s^h] `green, yellow' (*m- adjective prefix).
 This item is related to the previous one.

#masó(L) `red, brown' [N/S].

These two to four items could all be related.

#K!(i)-7íL [*q or *k^w] [l ~ n] `yellow; ruddy; black' [N/S].
 This is a bit shaky.

#lu `yellow' [S]

#ya `yellow' [S]

#ya=lu `yellow' [Yem:TM] (= *"yellow yellow")

#px.UL `to paint' [NC]

#px.uN `red earth' [NC].

These two items are related, and can be symbolized #px.uL [l ~ n].

#(a-)x^wá(-t.`) `blood; red' [N/S]

#(i-)s^hit. `blood' [NC]

#apx.ú `white' [N/S]

#t.^ha(y) `white' [N/S] (Sal ma- adjective prefix)

#tam `white (spot)' [N]

#it'a(yu) `white' [N] (EPom p^h- adjective prefix)

#ma-sa[y/n/∅] [s ~ s^h] `white; white man' [N/S]
 (*ma- adjective prefix)

#s^ha `clear; shining' [N/S]. Also listed elsewhere

#(a)mU `dark; night' [S]

#Pa `night' [N/S]. ([a ~ o] Cho)

#px.a(wi) [a ~ o] `night' [N]

#[U/i]p^haL [a ~ o] `black' [N/S]

#n^yil^y `black; to write' [S]

#(x.)alVm `night; pitch dark' [N]

#x.UR [l ~ n] `evening; dark' [N/S].

These two forms may be related through **a ~ o** ablaut.

#tu `night' [N]

#we `night' [N]

pPom *duwé < pHok *tu=we; Yan /we:tuks-/ < pHok *we=tu

#Tiy=n^ya [ʔasp] compound `night' [S] (= *"X sun/day")

ALPHABETICALLY ORDERED REMNANT

The following far from puny list contains all the items not assigned to any of the previously presented semantic fields and networks. They are ordered alphabetically by English gloss, though the format of the entries remains the same.

#[y/n/t]ama(-C'i) 'armpit' [N/S]

#Ca=k^wif instrument prepound + root 'to ask' [S]. (Cho /k^wicuf/ shows metathesis/scrambling)

#maL 'bad' [N/S]

#(q)x.uL 'bad; to fear; have unpleasant thoughts' [N]

#(i)ya: '(to be) afraid' [N/S]

#puq^ha(l^y) [l^y ~ n^y] 'basket' [N]

#upu [ʔglott/asp] 'to weave' [S]

#p'u: 'basket' [N/S].

Comparison with the two previous items suggests reconstructing #7pu:.

#(u)p'ay 'basket' [N]

#Lus 'basket' [NC]

#siT'iL 'basket' [NC]

#x.anow 'burden basket' [NC]

#k^w'in^y 'to twist; twirl; twine' [N/S]

#K'un^y 'crooked; basket' [N/S].

These two items should perhaps be combined, showing **i ~ u** ablaut.

#k^y'OL 'to bend; be bent' [NC]. This may go with the previous two.

#tu 'to roll (up/along)' [N/S]

#iwiL [w ~ m] 'to roll [; twist]' [N/S]
 #wi(K) 'to weave' [NC].
 These two items may have a common root.
 #(i)piç'i 'to weave' [N/S]
 #CiL 'to curl; curled up' [NC]
 #aç'ip [ʔasp] 'to wring' [NC]
 #ip^howal^y 'beads' [N]

 #pul [ʔasp] 'to boil' [N/S]
 #mU1 'to boil' [MA]
 #Pot 'to boil' [N]

 #C'o 'bunch' [N/S] [weak set]

 #pU1^y 'clothes' [MA]
 #[a/i]mo(1^y) '(mountain) sheep; blanket; shirt, dress; cotton' [N/S]

 #s[^]ap [ʔglott/asp] 'to close' [N/S]
 #c[^]aK [ʔa ~ o] 'to close' [N]
 #apul^y 'to cover' [N/S]
 #a7Li 'to cover' [N/S]

 #wuL [w ~ m; l ~ n] 'to crawl' [N]
 #(a)Ci 'to creep; crawl' [NC]

 #ima 'to dance' [N/S]
 #ihE 'to dance; sing' [N]
 #(e:)x^ye 'to sing; song; dance' [N]
 #[U/i]sow [s ~ s[^]] 'to sing' [S]

#qx.oL [*qx. or *q^h] 'to dent' [NC]

#pu [p ~ p'] 'to plant; dig; hoe; (digging) stick' [N/S]
 #o:pu [p ~ p'] 'to dig; hoe' [N/S]
 #e:Pu 'edible root' [N]
 (Yan w=e:pu- 'to dig roots', pPom *hi7bun^y 'potato' < **he:pun^y)

#..ap [ʔasp] 'to dig' [N/S] 'to dig' [weak set]
 #ip'eL ~ #iLep' 'to dig' [N]

#wI 'to dig' [NC] (cf. Yan w=e:pu- 'to dig roots')

#wasu [s ~ s^h] 'digging stick' [N/?+Cho /as.ú7/]

#T^hiN [i ~ a] 'direction' [NC]

#x^yaHtey 'to dream' [N]

#meN 'to drill; disk [beads' [NC]

#ama 'to eat (; drink; taste); food' [N/S]

#iwa 'to eat' [N]
 (Wsh <iw>, <ew> tv; EPom qa:=wa:l 'to eat by chewing')

#pi=LI [l ~ n; i ~ a] 'to eat mush with fingers/hands' [N]

#Las^h 'food; bread' [N/S]

#nI '(acorn) bread' [N]

#Sow(i:) [s ~ s^h] 'acorn bread; acorn cakes; acorn mush' [N/S]

#s^hiP [i ~ a] [ʔasp] '(to die [fire];) to douse (fire)' [N/S]

#ax^wir 'fence' [SW]

#isax.ay 'to fish' [NC]. Probably a compound.

#t.'el 'flat' [N/S]

#lip^h [i ~ a; l ~ n] 'flat' [N/S]

#p^hil [i ~ a] 'flat' [N].

These two items are related through metathesis.

#s^ha:l^y [a ~ o] 'to leak' [N/S]

#Pa 'to flow' [N]

#cuw [w ~ m] 'to flow; creek; river' [NC]

#panA [a ~ o] 'river' [MA]

#LuPu 'lake' [N]

#yu 'to fly' [N/S]

#Ta 'to fly' [NC]

#Kap [a ~ i] [ʔglott/asp] 'to jump; fly' [N/S]

#paK [a ~ o] [ʔasp] 'to fill; full' [N/S]

#[a/i]Pir [ʔasp] 'to fill; full' [N/S]

#PiNiH [i₁ ~ a] 'to fill; full' [N].

This may be related to the previous item.

#[a/i]p'uL 'to fill; full' [N]

#mati 'to fill' [N]

#a:Ku(-hi) 'to gather, pick up (esp. acorns)' [N]

#yu 'gathered in a pile' [NC]

#Tu 'to harvest' [MA]

#yisi: [i₁ ~ a] 'good; right (≠ left)' [N/S]

#C'um 'good' [N]

#Xan `good; pleasant' [S]

#XaliK'u `happy' [N/S].

These two items may have a common root.

#KiL [ʔasp] `to be hanging/hung; to hang' [N]

#TaK `to hang; droop' [NC]

#sarey [s ~ s^] `to hate; be angry' [N/S]

#ɕiw `to fight' [NC]

#TU: `to fight' [SW]

#fal [a ~ o] `to fight' [MA]

#x^wa(y) `enemy' [N/S]

#we `to have' [S]

#miɕa [i ~ a] `heavy' [NC]

#maL `to doubt; hesitate' [N/S]

#(i:-)mU `hole' [N/S]

#Cul^y [C ~ S] `hole' {N/S} [weak set]

#o:7aya `hole; cave' [N/S]. Probably a compound.

#TaK [ʔglott/asp] `hoop' [NC]

#Kows^ `hump' [SW]

#samuk^wir [s ~ s^] `to be jealous; to offer herself in marriage' [N/S].
Must be a compound.

#áwa `to be lacking; miss, be lonely for' [N]

#asiy+o [i ~ a] 'to laugh' [N/S]
 #Xir+a [i ~ a] 'to laugh' [N/S]
 #CAL 'to laugh' [N]
 #[a/i]LiK 'to laugh' [N]

 #ili [i₂ ~ a] 'lazy' [N/S]

 #Kisár+iK 'left(handed)' [SW]

 #x.am [a ~ o] 'to forget' [N/S]
 #s^am [a ~ o] 'to miss' [N/S]
 #s^a 'to not know' [N]
 #aK' 'lost' [S]

 #(a)ta 1. 'to do; make';
 2. prebound: causative (Yum), with a tool (Kar), transitive ((?) (Tol);
 3. postposed causative element (Sal) [N/S]

 #hay [a ~ o] [h ~ x.] 'to do; make' [N/S]
 #(u)mu 'to work; try; fix; finish' [N/S]
 #(a-)wir 'to finish' [N/S]
 #(a)ma 'to finish' [N]
 #q'a 'to finish' [N]

 #Pal [l ~ n] 'near' [ʔglott/asp] 'near'
 #maqx. [a ~ o] 'near' [NC]

 #iqir 'net' [NC]
 #(a)sU 'net; weir' [SW]

 #PeLa [ʔglott/asp] 'new' [N/S]

#XeniX `to make noise' [SW]
 #hiHθa `path; road' [N]
 #(a)n^ya `path; road' [S]
 #s[^]it.. `pear-shaped' [N]
 #p'ila [p' ~ p] `to play; toy' [N/S]
 #lo7o `to play' [S]
 #x.otal `poor' [N/S]
 #yu(N) `to pull' [N]
 #Tu(w) [ʔglott/asp] `to pull, drag out; pluck at' [N/S]
 #ç'aL `to put' [NC]
 #TuPi [ʔglott/asp] `rotten' [NC]
 #(a)sa [s ~ s[^]] `(to be) rotten' [SW]
 #K'uK `rough' [N]
 #ap^hE1 `round' [N/S]
 #7Ur `round' [N/S]
 #puL [l ~ n] `round' [N]
 #x.uLu `round; kidney' [N]
 #LOL [l₁ ~ n] `round; kidney' [N]
 #i:KiR `round' [N]

#fas [a ~ i] 'to rub; touch' [N/S]
 #siri [s ~ ø] 'to rub; cricket; cicada' [N/S]
 #q'aL 'to rub; brush; clean; wash' [N]
 #yuL 'to rub' [NC]

 #Kan^y [N] or #KaL(Vw) [N/S] 'to run (plural subject)'
 #SU 'to run' [N]
 #mu 'to run' [N]
 #yaH 'quick; fast' [N]

 #pu:Hes 'sack' [NC]. Also found outside Hokan.

 #wiy [i ~ a] 'to trade; buy; sell' [N/S]

 #(i)lam [l ~ n] 'to sew' [N/S]

 #sⁱ+yo [i ~ a] 'shade' [N/S]

 #win^y 'to shake; shiver' [N/S]
 #(i)yu 'to shake' [N]
 #TaTa 'to shake' [N]

 #q'UH or #q'u7wa 'shamanry; poisoning song' [N]
 #ma(:)t.. 'poison; sorcery'
 #x^ya:Lu 'ghost' [N]

 #θowP [N/S] or #s^uP [s[^] ~ c[^]] [NC] 'sharp'. [weak set]
 #(w)ax.raw [w₂ ~ m] 'sharp' [weak set]. Probably a compound.

#l^yu `smooth' [N/S]
 #La [a ~ o] `soft' [NC]

 #puyKa (~ #puKya) `spotted' [MA]

 #KaS `to stand' [N/S]
 #yaLiH `to stand (animate)' [N]
 #(a)ho `to stand' [N]

 #s[^]alaH `pitch; sticky' [N/S].
 cf. pYN *sa:nah. If anybody did any borrowing, YN did.
 #x.awA `pitch' [N]
 #pas [ʔglott/asp] `to stick (to/together)' [NC]

 #mes^e(w) [s[^] ~ s] `to stink; smell' [N/S]
 #x^we `to (have a) smell' [S]

 #px.u `to swell' [N/S]
 #peT [ʔglott/asp] `swollen' [SW]
 #iT^hAp `thick; fat; puffed up' [N]

 #wir [w ~ m] `straight' [N/S]
 #is[^]iP `straight; in a line' [N]
 #fu `true' [NC]

 #[a/u]sTuK' `(to) sweat' [NC]. Probably a compound.

#K'u 'to swim' [N]

#px.u 'to swim' [NC]

#po 'to swim; bathe' [N/S]

#caN 'to float; bathe' [NC]

#yi 'to teach; learn' [N]

#[i/u]ya 'to know; understand' [N/S].

These two items can be combined as #yi [i ~ a]

#:a:)Ki 'to think; have in mind' [N]

#af 'to throw; pull' [N/S]. cf. Sp tirar 'throw' = Fr tirer 'pull'

#faç' 'to throw' [N/S].

?Can these two items be combined?

#su(m) [s ~ s^] 'to throw' [N].
(-m may be incorporated directional 'away')

#T'am ~ #T'ap [ʔasp for #p] 'to throw' [S]

#niH 'to throw' [MA]

#:h)oL 'to throw at; hit' [N]

#ca 'to tie' [NC]

#ine 'to tie' [NC]

#tiL [i ~ a; l ~ n] 'to touch' [N]

#TaHP [ʔglott/asp] '(to) trap' [NC]

#tay [ʔasp] 'trap' [N].

These two items could have a common root.

#EmaC'i 'to wake up' [N]. This may be a compound.

#qx.UL 'to be hungry' [N]

#K'uN 'to want, desire' [N]

#k^w'aw 'to marry; love' [TM]

#mi7n^{ya} [a ~ i; i ~ a] 'tasty; sweet; to like; love' [N/S]

#wiH '(to be) sweet' [N/S]

#aθu 'sweet' [SW]. But cf. Sal /(k)amás^u/ 'sweet').

#(i)si+yV 'salt' [N/S]

#(a:-)k^{yh}a7i 'salt' [N]

#7c[^]UKpV 'to wash' [N]. Probably a compound.

#pa 'to wash' [N/S]

#paq^h [a ~ o] 'to wash' [N/S]

?also #paqx.u [a ~ o] 'to wash' [NC]

#pa∅ [a ~ o] 'to wash clothes' [MA].

These four items probably all have the same root.

cf. also the words beginning in #Pa.. meaning 'to hit, break, crack'.

#[i:/a-]-ya 'wind' [N/S]

#wA [N/S] 'wind' [N/S]

#amat.' 'year' [S]

#..ma 'yesterday' [S]

REFERENCES

The contents of and bibliographical references found in Margaret Langdon, **Comparative Hokan-Coahuiltecan Studies** (Mouton 1974), and Margaret Langdon & Shirley Silver, eds., **Hokan Studies** (Mouton 1976), as well as the articles (and their bibliographies) by Goddard (355-389), Jacobsen (545-591) and Langdon (592-649) in Lyle Campbell & Marianne Mithun, eds., **The languages of Native America: Historical and Comparative Assessment** (UTx 1979), are presupposed. Only works cited in the foregoing text without complete references are given here.

Campbell, Lyle & David Oltrogge 1980. 'Proto-Tol (Jicaque)', **IJAL** 46.205-223.

Greenberg, Joseph H. 1987. **Language in the Americas**. Stanford.

Kaufman, Terrence 1973. 'Areal linguistics and Middle America', **Current Trends in Linguistics**, 11.459-483

----- 1983ms. 'New Perspectives on Comparative OtoManguean phonology'.

----- 1988ms. 'Otomanguean Tense/Aspect/Mood, Voice, and Nominalization Markers'.

Langdon, Margaret 1986. 'Hokan-Siouan revisited', pp111-146 in **New Perspectives in Language, Culture, and Personality**, W. Cowan, M. K. Foster, and K. Koerner, eds. Amsterdam: Benjamins.

Rensch, Calvin 1966. **Comparative Otomanguean Phonology**. PhD dissertation in Linguistics, University of Pennsylvania.

----- 1977. 'Classification of the Otomanguean Languages and the Position of Tlapanec', in **Two Studies in Middle American Comparative Linguistics**. SIL; UTx Arlington.

Shaterian, Allan William 1983. **Phonology and Dictionary of Yavapai**. PhD dissertation in Linguistics, University of California, Berkeley.

Thomason, Sarah Grey & Terrence Kaufman 1988. **Language Contact, Creolization, and Genetic Linguistics**. Berkeley: University of California Press.

Turner, Katherine 1987. **Aspects of Salinan Grammar**. PhD dissertation in Linguistics, University of California, Berkeley.

Walters, Diane 1977. 'Coyote and Moon Woman (Apwarukeyi)', pp147-157 in **Northern California Texts**, Victor Golla & Shirley Silver, eds. IJAL-NATS 2.2.

T H E E N D