



WAPPO STUDIES

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Edited by Alice Shepherd

With Annotations by William W. Elmendorf

Report 7

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Foreword

by Alice Shepherd

The first of the two papers published here is a grammatical sketch of Wappo, a California Indian language originally spoken north of San Francisco in Sonoma and Napa counties with a small offshoot on Clear Lake in Lake County. ^{1S} Sawyer first wrote this sketch in the late 1950's or early 1960's and revised it in 1969; he had planned another revision before submitting it for publication. ^{2E} He worked with Laura Fish Somersal, one of the last two or three speakers still living at that time, for almost three decades beginning in the late 1950's until his death in 1986. Sawyer's publications on Wappo ^{3S} include an English-Wappo Vocabulary (1965), two articles on Spanish loanwords in Wappo (1964a and 1964b), an analysis of a Wappo myth reconstructed from Radin 1924 (1977, co-authored with Laura Fish Somersal), the chapter on the Wappo in the Handbook of North American Indians (1978), an article on Wappo names for people and languages (1976), and a paper (1980) arguing for a non-genetic relationship of Wappo and the Yukian languages originally spoken to the north in Mendocino County. He also addressed the Wappo-Yukian relationship in the second paper published in this volume, and in a talk on the Yuki ghost dance at a meeting of the Berkeley Group in American Indian Languages; the ghost dance lecture was subsequently recorded for the Speech Archives of the U.C. Berkeley Language Laboratory (1975). Sawyer found the Wappo grammar

(1929) and texts (1924) published by Radin to be unreliable as a basis for linguistic work.

4E

Jesse Sawyer was born in 1918 in Earlville, Illinois. He attended St. Olaf's College from 1935 to 1939, the University of Wisconsin from 1939 to 1942, and the University of California, Berkeley, from 1946 until 1955 where he received his Ph.D. in English and Linguistics. The interruption in his academic training was due to military service and he was a decorated World War II veteran. He became head of the English program for foreign students in the Department of Speech at U.C. Berkeley in 1958; was appointed Director of U.C. Berkeley's Language Laboratory in 1961; and in 1962 came to hold a concurrent position as Senior Lecturer in the Department of Linguistics. He received the University of California's Citation for Distinguished Teaching in 1962. (See also Golla's 1986 Obituary.)

Sawyer often felt discouraged because not much time remained for work on Wappo between his two positions in the Linguistics Department and the Language Laboratory, his work as major advisor for undergraduates in the Department of Linguistics, the many "Independent Study and Research" students he generously accepted, and his administrative committee assignments. In the last few years of his life he was looking forward to his retirement when he would at last be able to find sufficient time to analyze the Wappo data he had collected and to complete and publish papers he had drafted over the years. His dream of spending time on his research did not come true because he suddenly died of a heart attack on December 11, 1986.

5E

I believe that those of us who were his students, colleagues, and friends, and were familiar with his work on Wappo can to some extent pick up where he left off and make his Wappo data available for further comparative, typological, or other research. I hope that in this respect the publication of these two papers is only the beginning.

Sawyer begins the grammatical sketch with personal reminiscences on how he first happened to become interested in a California Indian language and how he went about finding an informant with the help of his colleague and former teacher Mary R. Haas. He was fortunate to find Laura Somersal who was an excellent speaker of Wappo and was willing to share her knowledge. Born in the 1890's and having secondhand knowledge reaching back to the 1850's, she was remarkable also in that she spoke Southern Pomo (her father's language) in addition to Wappo (her mother's language) and English. Because Sawyer was new to American Indian languages when he began his work on Wappo, his introduction to the grammatical sketch would make a good introduction to fieldwork with American Indian languages: how to find an informant, what questions to ask, what to expect when translating, etc. I occasionally accompanied Sawyer on fieldtrips and noticed that Mrs. Somersal was not just an informant to him, but a good friend. He was always concerned about her health, talked with her about her family, brought her items from Bay Area bakeries not available in Geyserville, and also purchased many of the beautiful baskets she made. Mrs. Somersal outlived him and in

1986 came to Berkeley to attend his memorial service. She passed away on July 30, 1990 at the age of 97. (For details on Laura Somersal, see Ortiz 1991 and Li and Thompson 1991.)

The next two sections (Location and Some History, Exterior Relations) show that Sawyer treated Wappo against the background of the tribe's culture as described by Driver (1936), as well as in its stage of post-contact change. In the section Exterior Relations, Sawyer deals with contacts between Wappo and other Indian languages and with Spanish, and with the obsolescence of Wappo as a result of contact with English. In this section, Sawyer speaks of Wappo as genetically related to the Yukian languages Yuki, Huchnom and Coast Yuki, but mentions (p. 18) that "Wappo has changed in some part at least by substantial borrowing from all of the surrounding Indian languages." Later he decided that Wappo was not genetically related to the group of closely related Yukian languages and attributed their similarity to recurrent close contacts (see Sawyer 1980). He was never able to convince William Elmendorf of his contact theory. Elmendorf published several papers arguing for the genetic relationship of Wappo and Yukian (See bibliography).^{6E}

The second paper in this volume, "The Colors of Wappo and Yuki," addresses the controversial relationship between the two languages. Based on the evolutionary sequencing of color terms expressed in Berlin and Kay (1969), Sawyer argues that one can determine something about the degree and kind of relationship between two or more languages by comparing their color systems. If color words recapitulate a genetic progression, then the terms

for the oldest colors such as black, white, and red should be old, primitive, perhaps monomorphemic words and should be cognate in genetically related languages. Color terms which develop later, such as brown, pink, gray, purple, and orange might be polymorphemic and metaphoric and might not be related. Words for yellow, green, or blue might or might not be cognate depending on the time of separation of the daughter languages relative to the development of color terms. Sawyer finds that in Wappo and Yuki black, white, and red are totally unrelated while yellow, blue, green, pink, and gray show similarities which might have resulted from language contact. Sawyer concludes that the color systems of Wappo and Yuki cannot be considered cognate and that the languages themselves might not be cognate.

When Sawyer dealt with language contact, he was in his element. At the University of Wisconsin his teacher had been Einar Haugen whose pioneering work in language contact, bilingualism, and treatment of language in its socio-cultural setting had had a lasting impact on Sawyer. He had much in common with his teacher: both were sons of Norwegian immigrants to the Midwest and both attended the predominantly Norwegian St. Olaf's College. In addition to theoretical linguistics, both men were also concerned with language pedagogy: Haugen is the author of several textbooks on Norwegian and a Norwegian-English dictionary; Sawyer taught classes on applied linguistics and, in his position as Director of the U.C. Berkeley Language Laboratory, developed English as a Second Language teaching materials and published papers on language teaching and learning.

Sawyer was in a good position to compare Wappo and Yukian. From 1972 until 1976 he had worked in the field with one of the last living speakers of Yuki, Arthur Anderson of Covelo, California. When I was a student in the Department of Linguistics at U.C. Berkeley, Sawyer hired me to transcribe the many Yuki tapes he had collected. We later worked together on that language and compiled a vocabulary (Sawyer and Schlichter 1984) based not only on his work with Mr. Anderson, but also on Roy Siniard's work (1966-67) with another speaker of Yuki, Minnie Fulwider, and on several older collections. Whether we were discussing Wappo or Yuki, Sawyer always had comparisons with the other language at his fingertips which to him proved that the relationship could not possibly be a genetic one.

Sawyer's papers are published here in their entirety and only errors have been corrected. Nothing has been changed in the analysis.

WAPPO NOTES

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|------------------------------|-----------------|
| 0. INTRODUCTION | 5. PRONOUNS |
| 1. LOCATION AND SOME HISTORY | 6. VERBS |
| 2. EXTERIOR RELATIONS | 7. WORD ORDER |
| 3. SOUNDS | 8. MODIFICATION |
| 4. NOUNS | 9. ROOTS |

0. INTRODUCTION

This work was begun in the late fifties. Having become part-owner of a house in the County of Sonoma--Sonoma is probably a Wappo word, by the way--I had gone to Mary Hans and inquired whether there might not be an Indian language in the area which needed additional study, or at least a little more attention than had already been given it. Since Paul Radin's two volumes of grammar and texts were already available, she suggested that I visit and talk to one or another of the two or three Wappo who were known to be living in the area of Geyserville, or Windsor, or Santa Rosa.

In due time I went looking for Laura Fish Somersal who was known to have been living around Windsor. In her own tiny village of a couple of hundred, no one seemed to know Laura Somersal and even the people living directly across the street had never heard of her. They said there weren't any Indians in the town.

Eventually I met Mrs. Somersal and found her to be a cheerful woman of charm and pleasantness, devoid of pretense, wise and placid with a placidity that is admirable in our world of hurly-burly and tenseness. She agreed to help me and described our work, when it was necessary to describe what we were about, in the words, "He's taking my language." In most respects she is a foreigner in her own land, but I was too naïve to realize this for a long time. At first she seemed simply an American housewife, as everyday as bread and butter. Much later, at the opposite extreme, there was a day when I felt as I looked at her that she was a completely foreign being, a woman from Mars, with whom I shared no single common idea.

7S

Since her English was quite good, it took me a long time to become aware of the fact that her lapses from English correctness arose out of Wappo patterns. I remember my pleasure when I asked her to translate into Wappo a particularly un-English utterance and discovered that what she had done was give English words to an Indian sentence. I've forgotten many of these, but here are a couple. Of her unwillingness to scold her adopted son she once said, "I couldn't get my voice out to say it to him," translating Wappo ʔəh ʔi:ʔəkəl ʔ'ahínasa:-ləhkhíʔ! təthu cáhema!. Or, describing an adult nephew's love of his baby basket, she said he was "stingy" with it. The verb for which she was searching a translation was ɕ'íí'ǣ which combines the idea of being stingy with keeping a secret. The slightly odd English in either case translates nicely into Wappo.

Her memory is active and large, reaching back through the reports of her mother and grandmother to about 1850. At first she thought I memorized each word she gave me as she had done in learning the three languages she manages to communicate in: English, Wappo, and Southern Pomo. Being a native speaker of two unwritten languages, she did not share my confidence in not knowing but knowing where to look it up. During the first year or two she had some lapses, mostly taking the form of giving me a Southern Pomo word instead of a Wappo word, particularly when words in the languages were similar which was often the case. However, her memory saved her most times. On one occasion she used the word pwéwlo for 'town' and corrected it two months later to péwlo?, although towns had not come up at all in the time between.

She never suffered from the feeling some speakers have that a word in isolation is really very funny, but she was never able to understand the linguist's concept of minimal contrast. The contrasts she brought me on her own were never even close to minimal. The idea of a word in isolation is not very important to her, and sometimes I wondered whether her segmentations were accurate. I asked if she had a word for 'juice' once, and, of course, I had better not have asked. After long cogitation she came up with pi-méy which I dutifully wrote down. Months later I knew that juice has to be from something. One has grape juice or orange juice, not just juice. Grape juice, for instance, would be kòla-pi-méy, literally 'grape from water',^B so my original 'juice' was 'from water' and justly deserved.^{9E} Another time in

attempting to break a sentence into its parts she took the plural suffix -le from the object of the sentence along as a prefix to the verb and insisted that the verb was plural. This is no difficult thing to do, since most verbs are plural and te- is a legitimate verb prefix, although it means 'toward' rather than 'plural'. Consider that for several birds to fly around, it's hoyók's:la?. Or hèta te-čó?! ?épa?! Come here, elder brother! (literally 'Here towards come elder brother'). And hè?e? temíte:te! 'Here are the short ones.'

It is a truism that English can only be translated inadequately into American Indian languages, and some parts of Wappo and other languages don't translate very well into English. It was a long time before I realized that Laura Somersal's ponderings and uncertainties were due to difficulties in translation and didn't mean she had forgotten how to speak the language. How do you emphasize that something occurs only once if you must speak in a language that, like English, marks some plurals and rather ignores the uniqueness of many occurrences? How do you convey the sheer impoliteness of using the proper names of relatives by marriage? It is impossible for a speaker of American English not to laugh at such personal names as káta?-has "Ancient of the Vaginas" or miče:hél, "Turtle-Anus," but they're just names. Miče:hél was an important leader in the early part of the century; káta?-has was just a woman's name. How do you cope with English past and non-past in a language that primarily interests itself in complete or not complete? And do you remember that 'brother-in-law' really is both one's sister's husband and one's

husband's brother? Nor is it really safe to speak to a father or mother using the terms 'father' or 'mother' unless you know whether either has a dead child, so that you know whether to use ʔéyaʔ or ʔóloʔ, náʔaʔ or hápaʔ, in speaking to either.

From time to time I was warned that a word was simply made up. Other times it was obvious. The trouble lies, in part, in the relative ease of making up new words and, in part, arises out of the fact that there are many ways of saying one same thing. William Shipley has said it well in describing California Indians as having sometimes simple cultures but intense and complex language lives of the mind. I've forgotten his exact words.

In the sketch which follows, there is a brief statement of Wappo genetic relations and Wappo contact with other languages. Some details of the principal word classes (nouns, pronouns, verbs) follow with some notes on how they combine to make utterances (word order, modification). Throughout, the presentation is directed toward supporting assumptions about internal reconstruction that are summarized finally in the discussion of roots.

1. LOCATION AND SOME HISTORY

The Wappo originally occupied an area roughly extending from Santa Rosa to Cloverdale, from Cloverdale to Middletown, from Middletown to Napa, and from there back to Santa Rosa. This small area, about twenty by fifty miles, parallels the coast of California about forty miles inland with its southernmost limits only a few miles north of San Francisco Bay.

Their subsistence culture was a combination of hunting, fishing, and gathering. They lived in permanent all year villages in the foothills and in summer camps along the rivers and creeks. The idea of summer camping was strong among them, and groups of Wappo who have lost all contact with their ancestral culture will still pack up their food, take their families, and go to the river or the seacoast beaches for a week in summer. Because of this summer shift in living arrangements there is some question about the actual boundaries of their territories. In spite of this seasonal nomadism they cling remarkably close to their own territories. Probably most of the surviving members of the tribe spend the winter months within the territory their nation has occupied for the last several centuries.

The Wappo give the impression of having been a somewhat loosely organized minority group for a very long time. Their material culture as reported in Harold E. Driver's Wappo Ethnography (1936) was extremely simple, and even religion has had no obvious elaboration among them. The basketry at which they were superb craftsmen seems to be essentially identical with that of the neighboring Pomo. Perhaps they were a minority group all along, borrowing convenient features from their neighbors. On the other hand, the appearance of simplicity might be recent due to the post-contact destruction of their culture.

2. EXTERIOR RELATIONS

Studying a language in the years of its last availability always raises troublesome questions about the nature of its

obsolescence and particularly about the influence of other languages upon it. Some assumptions that are made seem to rest upon the idea that a language becomes singularly subject to influences from other languages during the half century or more during which it is first reduced to a very small number of speakers. ^{11S} While such a development is possible, there are probably languages which for a variety of reasons resist exterior influences to the very end. Our lay picture of the "collapse" of a language is somewhat romantic and uninformed. If correct, it is certainly correct only by a series of unlucky accidents.

The obsolescence of Wappo began in the decade following the birth of Laura Somersal, sometime before 1900. The probable causes are the use of English as the language of schooling and the fact that English became an economically primary language for the Wappo at about that time. The important fact is that a child born much after that date did not learn Wappo as his first language. He learned it, if at all, as a second language. At that time Wappo also probably reached the nadir of its prestige among ^{12E} the people themselves.

During the following seventy years there is very little to suggest that English loans invaded the Wappo spoken by Laura Somersal and her relatives and friends. The word čə? for 'tea' probably came from Russian or by way of some Pomo language. čəyɲi? for 'Chinese' and akú:na? for 'steamship' may be from English, or may have come from another source by a different route. Occasionally, a contemporary place name is used in a kind of adapted pronunciation. Now and then, apparent English idioms

are translated, but the number of these is very small. Of the two or three that come to mind the most obvious is "to catch a cold" for which the root chách which means 'coldness' is combined with the verb me:wí?e? which means 'catch'.

The truth is that the more than approximately one thousand borrowed items we know are not from English. During the century and a quarter in which Wappo has been in contact with English, the effect of English has been so negligible as to be almost non-existent. It is impossible to generalize anything from this about the recent decline of Wappo as it did not borrow from English at any period, early or late.

Wappo was influenced by other languages in two ways. First were the native languages which surrounded it. Wappo has always existed, so far as we know, as an island of the main body of the Yukian languages, Huchnom, Coast Yuki, and Yuki proper. It has been pointed out that Wappo is the most divergent of the four languages, not unexpectedly in view of its geographical separation from its family. Such a charge is born out by such facts as that Yuki is a tone language and Wappo is not. ^{13S} This is particularly unusual considering that the Pomo languages which are nearest to the Wappo on at least two sides are also tone languages. There is no doubt that Wappo has changed in some part at least by substantial borrowing from all of the surrounding Indian languages. This exchange was a two-way process with Wappo words moving into the neighboring languages at the same time as Wappo borrowed vocabulary items and at times made literal translations

of foreign idioms. This last is particularly observable in some of the terms for dance and singing coming from the Pomo.

Another kind of translation occurs in which an item foreign to Wappo culture is described. Such terms sometimes have an aura of wry or mocking humor. For instance, a doll is an ʔəyk'a pəya, literally a 'child's skin'. The word used for skin, pəya, specifically describes a skin which has been removed but has not or has not yet been tanned or treated for preservation. Again, the word for butter is ʔəyk'a čəy'u 'baby feces'. While it is possible to know that Wappo was strongly influenced by the neighboring languages, so little has been done to organize these relations that nothing can be said except that the influence existed.

Further, it has not yet been possible to determine whether the Wappo were cut off from their congeners by an invasion of the Pomo or if they migrated from north to south at some very remote date. At this time I favor the idea that the Wappo were invaders into Pomo territory, although I have only the scantiest support for the assumption. Certainly they were neither aggressively warlike nor genuinely nomadic, characteristics which one might expect from invaders.

The small group of Wappo living at the south end of Clear Lake have been excluded from consideration. They are reported from the middle eighteen hundreds for the most part and appear to have been there only temporarily, perhaps as fugitives, as when Laura Somersal's immediate family was driven there by soldiers, or perhaps as a sort of permanent spring camp for those who fished the creeks running into Clear Lake during the spawning

season. It is also conceivable that fugitives from the law would take refuge on one side of the hills or another. Laura Somersal's grandfather abandoned his family in Lake County and came to the Russian River area to found a second family. The two families never knew of each other except through occasional chance meetings between presumably unrelated persons who claimed Halapéeta as a common parent or grandparent.

The second non-Indian language influence upon Wappo was Spanish. Of this relationship a little is known. ^{15S} Borrowings from Spanish fall into an early and a later or Mission increment. The early borrowings may have come in part via other Indian languages and consist of a vocabulary of trade items. The later mission group of loanwords falls into semantic categories which characterize the life of Indians in a California mission. Among the Spanish loans are a number of words which came originally from Central American Indian languages. A few Spanish words were borrowed twice. Finally, some probable Spanish loans can be identified but the Spanish words from which they came cannot be discovered. Here are a few words from each category. Early borrowings, mainly trade items include 'pea' čí·čalo? < Sp. chícharo; 'drunk' húla·ču? < borracho; 'scissors' tíhe·la? < tijera; 'sheep' wóle·ka? < borrego. Early borrowings, some common to other languages of the area and perhaps borrowed through other Indian languages, are 'beans' híwhol' < frijol; 'work' táwhal' < trabajar; 'owe money' déwel'sa? < deber + Wappo -sa? 'verb intransitive, indefinite'. 'Brick' látri·yu? < ladrillo; 'rice' háros < arroz; 'stallion' kára·hyu? < garanón;

'godmother' matri·na? < madrina; 'deck of cards' wára·ha? < baraja; 'tent' kárpa? < carpa; 'Hermina' fermi·na? < Fermina; 'bonnet' wó·ro? < gorro are examples of the late loans which characterize the mission period.

Loans from Spanish with Central American origins are: 'sour milk' lè·če šáwo·šukh < leche jocoque < Nahuatl xococ 'sour'; 'tamale' táma·le? < Nahuatl tamalli; 'grandfather' tá·ta? < Sp. tata < Nahuatl 'father'; 'cornhusk' ?ó·ha? < Sp. tuza < Nahuatl.

Loans for which the Spanish original is not yet known include 'syphilis' pótlo?; 'ostrich' yúlu·pa?; 'cards laid down in Conquian' kéu·ra?; 'card turned faced up in Conquian' méstoró?.

Words borrowed twice are: 'board' táphla? and 'tie in a card game' táwla? < tabla; 'iron' hie·ru? and 'barbed wire fence' hie·lu? sélka? < hierro and hierro cerca.

The fact about the relation between Wappo and Spanish is that Wappo borrowed from Spanish all the items it needed in order to adapt to European culture. It is likely that the continuing flow of laborers out of Central America provided a group of individuals with whom the Wappo identified. They probably continued right up to the present time to adapt Spanish words rather than English words when new vocabulary was needed. The later loans are difficult to identify. hèl káre·ta? 'fire cart', for 'train', is undoubtedly recent, but káre·ta? was probably used in the meaning 'cart' from at least as early as the mission period.

The exterior relations which have been important to the Wappo, then, include both Indian and Western cultures as they found them among their neighbors and as they were presented by

the Mexican Spanish missionaries and immigrants. The influence of the non-Spanish western culture which has continued until the present and in which Indians are now completely submerged is difficult to assess and will in any case not enter into this account because of the minimal effect of English upon the Wappo language. One feels, however, that the Wappo maintained their Indianness in all of those aspects of life in which they were permitted a choice.

3. SOUNDS

The phonemes of Wappo are twenty-one consonants, five vowels and length, three stresses and three junctures.

CONSONANTS

Unrestricted

Voiceless stops and affricates	p	t	tʃ	c	č	k
Voiced continuants	m	n	l		y	w

Restricted

Anomalous				s	š	h	ʔ
From Spanish	f	d	d	r	r'	g	

Unrestricted consonants occur in combination with the glottal stop (and are written /p'/, /t'/, /n'/, and so on) or with a following -/h/. Restricted sounds may not occur glottalized; they do not occur with a following -/h/ except across morpheme boundaries.

VOWELS

High	i	u
Low	e	a o

All vowels may be either short or long (marked with a raised dot, e.g., /e·/).

STRESS

Primary /' /	Secondary /` /	Weak unmarked
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JUNCTURES

Pause / /	Terminal /↓ /	Word space
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An unusual high pitch occurring at sentence initial is marked by the /|/ following the first word or two of an utterance. Questions without question word or the appropriate question suffix are distinguished by a slightly higher pitch in the part of the utterance following any juncture and are marked by a final /|/. Questions including any of the question morphemes have terminal junctures, /↓/, or /|/. A question with both a question word or particle and a final /|/ may be slightly emphatic.

A very interesting characteristic of Wappo is the way in which /ʔ/ and /h/ function. Both combine very freely with other sounds. /ʔ/ is the phonemic representation of one or another variant of at least a half dozen morphemes. The /h/ occurs most commonly in morphemes which contrast /CVh/ with /CV/. Another feature of the general patterning of the sounds of the language is the survival of some fragmentary vowel harmony in odd corners of the language. The noun for 'child' ^{18S} ʔéyk'a has the plural

ʔók'o:to, while the homophonous ʔéyk'a 'son' has the regular plural ʔéyk'a:te. Other forms exhibiting this phenomenon include ʔók'o:li, the subject form of ʔókel 'word, language', the subject form of a few of the nouns in -ukh, as

lelhu·mócukh > lelhu·móc·khi 'stone outcropping',
 ʔo·wótukh > o·wót·khi 'unfinished clamshell bead'.

These patterns must be contrasted with items such as

sítukh > sít·khi 'carrot'
 p'ílukh > p'íl·khi 'roll'.

For convenience secondary stresses are not written except in places where they are unpredictable. Between any two junctures there will be one primary stress. All roots and parts of compounds in the same sequence will have secondary stress. The economy of the language is such that the secondary stress in more than ninety percent of occurrences will fall on alternate syllables counting from the primary stressed syllable. Thus in lelhu·mócukh 'stone outcropping' (see above) there is a secondary stress on lè- which is predictable and unmarked.

4. NOUNS

Wappo is more verb-centered than noun-centered. Once a discussion is started and the subject is known, the speakers may avoid repetition of the subject until a new one sufficiently out of the context forces specific mention. It is particularly true that pronominal subjects are avoided. One doesn't need to talk about persons in conversation when one can know, by a nod or by inference or familiarity, who is being referred to and when a new

person has entered the conversation. For non-personal subjects the situation is less clear. Certainly things are referred to explicitly more frequently than people. Nevertheless, it is preferable for many reasons to start out our investigation with the noun: noun inflections are relatively straightforward and uncomplicated; more is known about them; and because they are relatively uncomplicated, they offer a convenient introduction to structures which, if approached from verbs as a starting point, might appear to be complex, obscure, and uncertain.

It is convenient to say that a noun in Wappo is a form which may occur with the subject inflection, most commonly the suffix allomorph *-i*. However, all nouns will be quoted in their object forms because that is the way the native speaker gives words in isolation and because the object form is the uninflected form. 19E

From the point of view of its phonological make-up the noun is variously constructed. In its simplest shape it is an undorned three-part, monosyllabic root, the most basic unit in the language and the unit from which all other units in the language may be guessed ultimately to derive. Here we have such words as *hél* 'fire', *lél* 'stone', *hól* 'wood', and *méy* 'water'. The morphemes for 'wood' and 'water' are among the most frequently used items in the language, a fact not surprising considering the environment and the kind of material culture the California Indians of the area had evolved. The fact that there are few restrictions on the shape of the monosyllabic noun is illustrated by *hú?* 'head', *éw* 'fish' or 'husband', *mél* 'acorn', *náy* 'digger pine nut', *č'éy* 'mushroom', *tóm* 'fawn', and so on. The

restrictions which do exist will be noted briefly in comments on the Wappo root (Section 9). There are very few monosyllabic verb forms: čóʔ and čóh, imperatives of the verb 'to go' are examples that come easily to mind.

Nouns somewhat more complex than the above monosyllables are those which consist of a root plus a simple vowel noun marker. All of the vowels of the language occur as noun markers. It is important to note, though, that clusters ending in /w/ and /y/ or in the glottalized or voiceless varieties of /w/ and /y/ do not seem to occur as noun finals, i.e., polysyllabic nouns ending in noun markers -ew, -ay, -uy', -iw', and so on, are rare or perhaps non-existent. The words which follow illustrate all final noun markers that can occur. As elsewhere all citations are in the unmarked object form.

čhúya	house	húc'i	eye
céma	twilight at dawn or evening	ʔúči	last night
šíla	skunk	šáwo	bread
húc'e	manzanita blossom	híšo	live oak
móle	sweathouse gambling game	čáno	manzanita
šíʔe	grass, weed	k'éšú	meat, deer
c'íti	bone, awl of deer bone	ʔéču	creek
		háyu	dog

The complexities of these groups of examples are easy to find, although they cannot be immediately apparent. Let us take them one vowel final at a time.

Many nouns in the language have the form CVCa. However, in Francis Berton's "Vocabulaire des Indiens de la Vallée de Napa et du Clear Lake en Californie" we find the form lucma for 'bow' on page 2 matching the form lúk'a for the same gloss in the dialect of the Russian River area. Contrast these with the Russian River word lúk'i 'root'.^{21E} Since the suffix -ma was probably at one time an instrumental, at least some nouns in -a may belong to such a group. c'ic'a is an interesting example. The verb root c'ic'- means 'cook' and the noun c'ic'a is the word for 'bird' but also carries the meaning of 'bird or jackrabbit dressed and ready to be cooked'. It is obvious, of course, that nouns derived from transitive verbs might mean 'something for' plus the verb meaning and would appear to be instrumentals of a sort. One or two examples are not sufficient to establish a pattern for the many nouns in final -a. We assume that the CVCa is to some extent at least very old and the -a to be an original nominal suffix. As such it has no properly identifiable meaning apart from a few random items such as those just mentioned. A native speaker would certainly not consider the -a suffix segmentable. We take these nouns, then, to be indivisible units.

The nouns in -e present another kind of problem. These forms preserve an irregular alternation between -e and -a-y as seen in such examples as šónē > šóna-yi 'round tule' in its object and subject forms, respectively. The existence of an underlying alternate -a-y- does suggest the question as to whether the -e is historically original or whether it is simply an end result of a more primitive complex form suggested by the

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-a:y-. The nouns in -e apart from this minor cavil appear to be an original and unsegmentable set. There seems to be no morpheme with which the -e can be associated. Its origins--whatever they were--are, for the moment, lost. It is possible, however, that these were originally a subclass of the nouns in -a.

Nouns with object forms in -i are rather rare and are affected by a whole complex of questions. First of all is the fact that the suffix -i is the most common variety of the subject suffix. Moreover, the difference between subject and object is an obligatory difference whereas some of the other inflections of the noun such as inflections for plurality and the various suffixes indicating the location of objects may be expressed or not, or may be expressed either in the noun, in the verb, or in a modifier. To a Wappo speaker a noun in -i is somehow "wrong" as an object form since the object normally opposes the subject while -i means 'subject' and any other final vowel means 'object'. One can, of course, speculate that some of these nouns occurred only as subjects, never as objects, so that any original final vowel was lost from simple non-use and the word came to be spoken of in its subject form.

In addition there may be a tendency for the final -i to occur as a leftover from older vowel harmony of which a few examples have been given (Section 4). Among the pronouns we find ʔi:si, 'we', and mi:si, 'you plural' or 'wife'; pi:ci 'quahog' is another example. A few examples are purely onomatopoeic reduplications, such as pipi 'quail'. However, sound imitative words

and reduplication are both rare in the language. A further source exists in that nouns are derived from verbs by the removal of a final glottal stop from the verb so that such a form as wáci 'cost, price' is probably derived from ?o:wáci? 'to cost something'. Finally, there may be a tendency for nouns in -i to exist particularly where roots had a palatal consonant as the last element.

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Turn now to the nouns in -y. As with nouns in final -i there are few nouns in this class. The -y does not lend itself to any likely analysis and for good reason. Looking at our original examples, a first observation is that k'éǎ- as in 'meat, deer' does not occur as a root in other forms in the language and although háy- occurs, there is no obvious reasonable semantic connection between the items 'dog', 'ten', and 'count', the meanings of the words containing the element háy-. We decide that two different morphemes are involved. The fact is that all three words and presumably all other CVCu words in the language are loanwords. The word for deer or meat, k'éǎy, comes from Pomo and shares with c'íç'a, the word for bird or jackrabbit dressed and ready to cook, some sort of old taboo on the names of these important food items. The word for deer has a final -m in Pomo and indeed appears on page 5 of Berton's Wappo vocabulary as "Viande, kéchioum."

The word for dog was suspect, of course, for two reasons. It appears in most of the neighboring unrelated languages and many other Indian languages of California. In Wappo the dog is the only animal for which there are two names, háyu and ǎú:ǎu?,

and čú.čú? is known to be a loanword from Spanish sources, again in many California languages. Both are loans as is the very existence of the dog in California Indian culture. ^{24S}

The root čéč- in čéčú 'creek' ought by all rights to be a native word and may be. The root apparently occurs in čéčú 'the rear of the dance house used as a dressing and storage area, usually separated from the main area of the dance house by a curtain.' There is no obvious semantic connection between 'creek' and 'dance hall dressing area'. On the other hand, 'in the creek', čéčú.muh, contains a unique medial -m- which is very reminiscent of the k'éčú > "kéchioum" of 'deer', borrowed from Pomo. The word for 'creek' is odd in the other respect that there is no word for river. ^{25E} The blank seems to parallel the taboo area in relation to foods and may be part of the same complex. Tentatively one may guess that all Wappo nouns of the form C'VCu are probable late loans. William Elmendorf has pointed out that Wappo čútu 'beard' is apparently from Miwok. ²⁶

Turning now to the nouns of the form C'VCo we find still a different situation. Although the list above gives only 'bread', 'manzanita', and 'live oak', we may as well expand our collection to include not just nouns of the C'VCo shape but all Wappo nouns having a final -o. The word 'Wappo' itself, by the way, is not used by the Wappo now, if it ever was, and is commonly said to be the Spanish word guapo, 'fierce, proud, handsome'. A list of words with -o is again limited, there being probably no more than twenty-five or thirty such words in the language, but these are a very interesting group and helpful in clarifying the general

habits and feeling of the language. Here is the list as complete as it is possible for me to make it:

céko·to	they, those people
chók'i·šo	golden cup oak or leather oak
c'ó·	redwood
čáno	manzanita
čhéč'i·šo	tan oak
čhícho	pine, unidentified species
héko·to	they, these people
híšo	live oak
khóthi·šo	black oak
mílo	oak, unidentified species
napók'o	alder tree
napáyo·k'o	madrone
náyo	digger pine
pát'o	cottonwood
p'i·pho	white oak, valley oak
sólko	mouse
sót'o·ko	elk
šáwo	bread
šumót'o	buckeye tree
wíci·lo	meadowlark
wíyo·ko	cocklebur
ʔop'ít'o	27E fir, Douglas fir (?)

The first observation one can make is that the list is primarily a group of trees with one large and spiny weed thrown in and, as a second group, some animate nouns including people,

birds, and animals. A couple of anomalies are the word for 'bread', šáwo, which is also used of 'acorn bread', a common Central California Indian food, and č'ó: 'redwood', which, although a tree and obviously a member of the tree group, is unusual in having a long final vowel, a practically unique occurrence in the language.

The -o marking trees is taken to be the result of a reduction of the word hól 'tree' from ancient compounds. ^{28E} This conclusion accounts neatly for redwood č'ó: as being *č'ó plus -o. Such a history seems more likely than *č'ó plus hól, as there seems to be no good reason for a reduction to č'ó: of a form *č'óhól, which might have survived in that shape. However, the favored solution for č'ó: forces us to accept the idea that -o was once a living, manipulable suffix, a conclusion we may not find completely comfortable. For instance, čhíčho, one of the pines, would be *čhíčh plus -o whereas the evidence of the roots (Section 9) is that the more likely development was čhíč + hól > čhíčho, where the -h- is from the original compound, from the h of hól 'tree'. In other words, final -h and final glottalized sounds as well were the results of analogy from early compounds and backformations from them, so that *čhíč- + hól results in the development of a new root čhíčh- to which, of course, we can later add the suffix -o. However, hól continued to occur in compounds, indeed still does, so that we have the interesting pair mítišhol alongside míti:šohól, 'walnut' and 'hazelnut tree' respectively. Here obviously the míti:šo- is evidence for the existence of earlier *míti:šo to which hól must have been added

long after the native speaker had forgotten that $-o$ was a variety of the morpheme $hól$. Unfortunately one would like to assume that $mítí:šohòl$ designates a tree introduced at a late date on the evidence of the double presence of the tree morpheme, but surely the hazelnut bush is indigenous to California and, if any, it would be the walnut $mítí:šhol$ that was viewed as foreign by the Wappo, a rarer tree about which questions are still raised. ^{29E}

The complexities of the nut trees are further ranging than the data so far examined. If we look back at our list we note that 'leather oak' $chók'i:šo$, 'tan oak' $čhéč'i:šo$, 'black oak' $khóthi:šo$ contain an element $-i:š-$. The other words in the list do not contain the element. The feature these three have in common is that they are all oaks. The commonest oak in California is the live oak which is distributed more or less heavily throughout the state from Shasta County south. Examining our list we find it, $híšo$. From the point of view of a synchronic statement one would analyze $khóthi:šo$ as $khóth + i:š + o$, but note that the historical reality could as well have been $*khót + híš + hól$. In the case of $chók'i:šo$ and $čhéč'i:šo$ the combining form of $híšo$ is $-i:š-$ --the lengthening of the vowel was at one time automatic (Section 9)--the $h-$ of $híš-$ being lost in these compounds since glottalization and aspiration are mutually exclusive.

We are left with a further problem in that 'walnut tree', $mítí:šhol$, and 'hazelnut bush', $mítí:šohòl$, appear to contain the element 'oak' $-i:š-/í:š-$ from $híšo$. Two problems are apparent: neither one is an oak, and the hazelnut bush is not a tree, a

fact twice transgressed since it is specifically 'hazelnut bush' which contains the 'tree' morpheme in its two varieties. A word mítíš exists with which the walnut and hazelnut are related. It is the word for nuts, generally, and once presumably and specifically the hazel nut. The morpheme -iš also occurs in a small group of descriptive nouns which are not trees, but which are not relevant here.

Some of our problems are solved when we examine the root mít-, for we find it occurs elsewhere only in míte, the word for 'short'. This explains some of the natural history. The -iš of mítíš is not the -iš which derives adjective-like nouns, logical as "shortish" sounds as a meaning for mítíš. It must be the variant of híšo 'live oak'; the hazelnut bush was called "short híšo."

In Wappo, tree and plant names are usually based on the product for which the tree is used rather than the reverse. So several of our tree names have been based on a word for a seed or fruit.

digger pine nuts	náy'	digger pine	náyo
any pine nut	núm'		
"milo" acorn	míl'	unidentified Sp. oak	mílo
any acorn	mél		
white oak acorn	p'i·ph	white oak	p'ípho
buckeye ball	šómo?	buckeye	šumót'ó
live oak acorn	híšiš	live oak	híšo
black oak acorn	khóthiš	black oak	khóthi·šo

golden cup acorn	chók'iš	golden cup oak	chók'i.šo
tan oak acorn	čhéč'iš	tan oak	čhéč'i.šo

It appears that there were in very ancient times two identified kinds of edible seeds or nuts. One of these was a seed similar to the acorn of the live oak, hišo, which while not the most-favored acorn, was at least edible in emergencies and had the advantage that there were more of them everywhere than there were of any other variety. This acorn was apparently called *hiš. So the acorn of the live oak was hišhiš > hišiš. (The sequence -šh- is not permitted.) So, for example, the black oak acorn was the khót + hiš > khóthiš and the black oak tree was the khóthiš + hól > khóthi.šo. A possible late arrival was the sugar pine, č'óč'alhol, whose cone was called č'óč'el. And mitiš, the hazelnut, could as well have been "short *hiš," because of the size and appearance of the hazelnut in contrast with the acorn, as to have been named after the tree.

The second seed is perhaps prior to the acorn class in time. It is marked phonologically by the glottal stop as the last element in the root as in náy' 'digger pine nut', versus náyo 'digger pine tree', and míl' 'milo acorn' versus mílo, the oak that produced míl'. Not many of these are easily identifiable, although I take the glottalization of the final consonant in the stem of many tree and fruit words to indicate an occurrence of this ancient seed morpheme. If we take náy' + hól as being the original of náyo, the original presence of the h is evidenced by the absence of the glottal. The combination was not allowed. Among examples of the final glottal we have:

čhéč'iš	tan oak acorn
ʔop'it'o	Douglas fir
núm'	pine nut
napók'o	alder tree
pát'o	cottonwood
šumót'o	buckeye
šómoʔ	buckeye ball
napáyo·k'o	madrone
c'ic'a·wok'o	berry
chók'iš	leather oak acorn

Items such as čhéč'iš and chók'iš contain the morpheme 'seed, fruit, nut' twice, once in the form of the glottal and again in the form of -iš. I might assume from the evidence of these words that the presence of the Wappo in an acorn growing area is more recent than their contact with a climate in which pine nuts were an item of diet, that the hazelnut was originally less familiar to them than the walnut. However, this earlier period, if it ever existed, seems to me to be very ancient, as at least two different levels of contact with kinds of oaks and pines might be argued. In any case one can travel north no great distance before the typical oaks thin out or disappear, but such a home is certainly to the north of any area in which the Wappo or the other Yukian Indians have been reported as living.

Most of the remaining words in -o are at least in part vestigial evidence of vowel harmony, the most obvious being 'child', ʔéyk'a, 'children', ʔók'o:to. 'Mouse' sólko, is difficult and might be suspected to be a loanword except that a root

of the shape sól- or sólh- does exist in the language in such a word as nasólhē 'fringe as on the edge of a towel'. Of all of the group that remain from our original list that are not tree words, one should note that the consonant before the final -o is never glottalized. Now we can look at the last of the CVC_o examples, namely šáwo 'bread'. šáw- as a root occurs only once other than in this single word. The existence of glottalization as a separate historical morpheme in the tree series suggests that one might look for a root šáw'--- which does indeed exist--but such pairs will not produce related forms except under rather specific situations. Usually the glottalization or aspiration marks a different morpheme. Another occurrence of šáwo is helpful, however. The phrase for 'sour milk' is lè:če? šáwo:šukh. The suffix -ukh produces adjective-like descriptive nouns. The medial -š- is inexplicable within Wappo. The other appearance of šáw- is in the word for 'clod', 'something which crumbles easily', šáwmiš, but in this case the -m- is as difficult to account for as the -š- of šáwo:šukh. The crucial clue lies in the fact that milk is a foreign importation, its source in the Spanish period marked by the fact that the word for milk is from Spanish. The 'sour' does not come from Spanish, but from Mexican Spanish out of Nahuatl in which the word 'sour' is xococ which in turn became Spanish jocogue. Presumably the Wappo abstracted šáwo from šáwo:šukh because sour milk or clabbered milk was used in making bread. The foreign word was extended to various acorn products of their own which seemed similar.

At least three more derivational suffixes and a variety of prefixes appear with the nouns of Wappo. Although the prefixes will have vestigial meanings, the suffixes, -ma, -is, and -ix cannot really be segmented except as derivational suffixes.

We have already seen -ma alternating with -a in the word for bow, lúk'a or *lúk'ma. This alternation was between dialects. However, contrasts can be found within one dialect as in túč'a 'big' k'aníhtúč'ma, 'leader, chief, boss'. The compound noun, 'chief', suggests that the -a and -ma suffixes may have been in contrast, may have been different morphemes. There is also the possibility that the -ma was at one time a variant of -e:ma, the instrumental suffix. In the brief list of nouns in -ma which follows, any instrumental meaning has certainly become vestigial, except perhaps in two or three of the items. Although this list is short, these nouns are not particularly rare.

čhóhma	large work basket for straining things
hólma	woods (Cf. hól 'wood, tree')
k'ícu·ma	poison oak
phí?ma	flat winnowing basket
šóthma	ditch
ťóhma	poison

The -is suffix produces nouns which are descriptive, but up to this point no successful exterior relationships have been determined for it. In that respect it has appeared more obscure than the -ma of the nouns above.

c'ítu·is	fish with pins instead of fins (Cf. c'íti, 'bone, hard')
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halawétis	old man
háʔis	knowing how
hochácis	bow-legged
-hópis	on ___'s behalf (Napa dialect)
huc'éhis	spic and span
husíwhis	disorderly of hair
huyówis	bushy-haired
múy'is	wild tulip
na·chéhis	dish-shaped
táwhal'is	working

The fact that this was a functioning suffix in recent times is evidenced by the Spanish loan táwhal 'work' from trabajar which occurs with -is, but the meaning does not help determine what has happened. Again, 'on someone's behalf' might contain a helpful clue, but the root hóp- is the numeral 'two' and once more the relationship of the parts and their meanings is not clear.

An explanation does exist if we turn rather to the verb. The non-final suffix -is- is the causative as in céy.tista?, 'made fire an arrow or gun'; c'ésisyá:mi? 'going to give a bath'; c'ic'ista? 'cooked'; mahésista? 'made someone give', and so on. It seems likely that nouns in -is are derived from causative verb forms; certainly this accounts for the adjective-like quality of this group of nouns. This also accounts neatly for the very recent táwhal'is, since the group of words is small enough that it is difficult to imagine a functioning suffix producing so few nouns while one of these few is as new as a mere century and a half ago. The verb suffix -is- is a live, functioning unit.

Nouns could be derived from any causative verb at any time. The fact, of course, is that few have been so derived, but the possibility probably exists even today.

The last of the important deriving suffixes is -iḡ. While -iḡ is found in many verbs and few nouns, -iḡ seems to turn up in many nouns and few verbs. The relations of -iḡ and -iḡ to the language as a whole recall two facts. First of all, it may have become apparent by now that the noun and verb are not separated from each other in Wappo by having unique sets of derivational suffixes. A noun can be defined as a form which is inflected for the subject case. Perhaps sounding equally facetious, a verb is a form inflected with the verb marker, the final glottal stop or glottalization. In many cases the same form can be inflected with either noun or verb affixes. For example, 'play the flute' is lùliḡ lúli'?, literally, 'flute play', but the verb for 'play a wind instrument' obviously contains the root for the word 'flute' itself. Of course, the verb does occur after the subject. Our canonical order will be SOV. So we expect and do find that derivational affixes and even some affixes which must be considered inflectional will appear as integral parts of either noun or verb. For the moment our best guide must be statistic and in the absence of a clear meaning for -iḡ we take its origin to have been nominal since it presents the reverse of the frequency picture of -iḡ which was obviously verbal in origin. The fact that the line between derivation and inflection is not clearly drawn is not really troublesome because the bundle of characteristics separating these two categories would by the

disparateness of some of their defining qualities not infrequently result in examples in which inflectional and derivational elements overlap. Sweet implied such an interpretation in 1876 in his Words, Logic, and Grammar.

If we assume, as we seem to be justified in doing by historical evidence, that derivative syllables and inflexions have developed out of half-words, we may roughly describe a derivative syllable as a half-word which has lost its logical, an inflexional as one which has lost its phonetic independence.

The second effect which might be observed of the derivational suffixes -i₂ and -i₃ is that the /s/ and /š/ seem to have some special position in the verb inflection. Suffixes of the form -sa?, -se?, -si? and -ša?, -ši?, -še? occur. The immediate temptation is to guess or hope that the /s/ and /š/ here will be associated in some logical fashion. Beyond this pairing of /s/ and /š/ in verb constructions is the fact that both are restricted sounds, the sounds which may not be followed by /h/ or /ʔ/.

The identification of -i₃ is assisted by a few pairs of occurrences of roots with -i₃ which appear also without the deriving suffix or in other contexts. chíwiš 'nit, egg of a louse' (cf. chíw 'housefly'), šíw'iš 'whistle of the wind in cracks' (cf. ʔošíw'mi? 'blow on something to make music'), túy'iš 'true' (cf. túy' 'truth'), t'íʔiš 'straight' (cf. t'íʔelkhi? 'straightened itself out'), náwiš 'seeing' (cf. náwíi? 'saw'). -i₃ appears to produce forms which refer to having reached or being in the process of reaching the state specified by the root, or may have some other obscure meaning.

The noun consisting of a syllable or a syllable followed by a simple vowel is manipulated in a variety of ways. A small

collection of prefixes and suffixes may follow and compounding is possible, but the results do not fall into particularly neat subdivisions. Especially the lines between inflection, derivation, and compounding seem to be rather matters of degree than not, and examples can be found of all the possible degrees and kinds of coalescence. ^{33B} By and large, the individual parts are meaningful although native speakers react only to the large conglomerates and either refuse to segment or, as we have already seen, mis-segment, if forced to make a decision. In spite of all this, Mrs. Somersal can always tell me when an item is a recent loanword and the most obvious way to learn this is to check whether the accented root occurs anywhere else in the language. Pointing out that two words contain an identical stressed root and a semantic similarity, however, only elicits a bemused admission that I may be right, although it is obvious that she considers me to be harmlessly insane. Some distinctions can be made, however. Inflections seem to be suffixed in the noun except for possessives which are prefixed in the singular and part of the plural (Section 5). It is also convenient for the moment to divide affixes on a purely arbitrary consideration of their phonological shape: full CVC syllables are elements in compounds; units consisting of only a CV or VC are affixes, sequences larger than one syllable are compounds or parts of complex compounds. Full syllables of the shape CV?- or CVh-, however, seem to be affixes rather than parts of compounds a good part of the time.

Looked at in this way our nominal prefixes include a series of instrumentals originally designating the body parts--head, hand, foot, mouth, waist, buttocks, the numerals one and two, the personal prefixes k'á- and ʔón-, and a few others. This, however, was the historical reality. Instrumental prefixes based on body parts apparently occur in other unrelated languages of this geographical area. What we actually have is a complex interplay of the elements with themselves and the roots to which they attach. This forces the cautious analyst to decide that some elements must be left as unsegmented parts of words while identical sequences in other cases can be easily segmented and accounted for. Here are a few examples:

Head	húʔ
spic and span	huc'èhis
upper cheek	hučhúle·paʔ
disorderly of hair	husíwhis
Mouth	nán
saliva (lit. mouth water)	naméy
inside the mouth	nuwéla
tongue	na·ʔác'e

There is no single word containing šú- which refers to the waist, the middle of the body, in the way that húʔ and nán above match their derivatives:

behind, downstream	šuwéla
back, lower flat part of back	šukóloʔ
cart, two-wheeled buggy	šupépaʔ
pubic area	šuč'óla

one	páwa
bundle, sheaf	pakápukh
alike, paired	pasákis
half, middle, center	pat'áw
two	hópi
bowlegged	hochácis
astride	hochácukh
both sides	howélawela?
break in two	howóš'i?

Two prefixes, na- and pi-, combine to form a recurrent, but still untranslatable, unit:

character, type, odd person	napimóyi
bird with black marks above the beak	šimanapic'ówc'ow

Of the roots which combine to form compounds the most frequent are such items as 'wood' hól, 'water' méy, 'fire' hél, and 'stone' lél. han-, meaning 'less' or 'behind', turns up now and then, as well as a variety of others.

large, fat dog tick	lelwí·iš
funeral pyre	helhu·téyuh
two-stick basket	holhòpukh táka?
back of the head	hanč'ótiš

There are a multiplicity of compounds consisting of complex words put together:

chimney (lit. smoke go instrumental)	chinčóke·ma
flea poison	č'ote·t'óhma

and so on. These are obvious compounds. The difficulty arises not with these but with the relatively large number of monosyllabic morphemes such as those above whose function cannot be clearly specified, since they are neither clearly derivational affixes nor full members of compounds.

Finally, ʔóma and ómi which should form complex compounds can be added. They are the object and nominative forms respectively of the word for 'world'. Here the problem is reversed in that these are words consisting of a root plus a derivational and inflectional affix, respectively. At most these should enter into complex compounds. Yet these two words function so nearly as prefixes that the grammarian is constantly troubled by them. They are a sort of constant reminder of the failure of grammatical systems to fit what languages are. Since ʔómi and ʔóma are an original subject and object, it is expected that compound nouns formed with them will mostly be derived from verbs. The last point to note is that the native speaker feels that there is no word for 'world, environment, the earth around us' in Wappo. ^{34S} Moreover, the sequence ʔóma and ʔómi cannot be elicited in isolation. Here are some examples:

ʔomakáʒe·le	fallow land
ʔoma·múl'wela	in all directions
ʔomana·tésukh	plain, flat land
ʔóma·wen	year
ʔòmi makhahyá·miʔ↓	It's going to rain.
ʔòmi phóhikhhiʔ↓	It's foggy.
ʔòmi ʔoč'íʒakhhiʔ↓	It's dark.
ʔómpi	under

Having already discussed some of the most difficult derivational suffixes there remains only to list and exemplify the more obvious derivational and inflectional suffixes and the postpositions of the noun. The derivational suffixes which are important enough to observe in passing might include the instrumental -e₁ma, which we have suggested may have remote and random relations with the suffixes -ma and the simple noun final -a; the general possessive -nek'; and the female marker -pi. Here are some examples:

ʔocí·ye·ma	pump drill
papel'chóy'e·ma	pencil
may'huʔǎhóphe·ma	face powder
meyčóhe·ma	anything water can run in
c'lc'a nóm'e·ma	shotgun (lit. bird scattering instrument)

The possessive -nek' is derived from a verb root of the same phonological shape and for which there is the usual complete set of forms. The future, for instance, is nók'eya₁mi? 'going to have'. By our definition above, -nek' might best be considered a member of compounds, except that it always occurs in final position unlike words such as those used for 'wood', 'stone', 'fire', and 'water'.

k'a·k'éšunek'	butcher (lit. person meat has)
yók'e·ma šuwùl'eʔsnek'	rocking chair
k'a·ʔomúču·nek'	sucking doctor

Female names and some female kinship terms are marked by the

suffix -pi.

ʔhoy'cáwe·pi	a niece of Laura Somersal's (lit. weed sp. blossom female)
-yápi	younger sister
-ʔéšē·pi	daughter-in-law
k'anihmá·yaʔpi	female leader

The postpositions of the noun include such items as -pi 'origin' and -Vh 'on top' (cf. the prepositions of the verb). A much larger number of postpositions occur with the pronouns.

wénpi	from the south
meyhínawela·pi	from San Francisco (lit. water other side from)
ʔomašéʔtuh	in the wind
méyuh	on the water
ʔi·k'it'ah	on my stomach

A final aspect of the noun is its inflections for subject singular and plural subject and object. While we have passed over difficult phonological rules, as, for instance, in the case of the postposition -Vh above, it seems appropriate to explain the subject inflection in somewhat greater detail. The kinds of alternations we must account for are exemplified in the following list:

OBJECT	SUBJECT	
šíma	šími	nose
kúrus	kúru·si	cross (Sp. cruz)
ʔocóniš	ʔocónši	fried acorn mush

mítiš	míti·ši	nut, hazelnut
lúče	lúči	tobacco
č'óše	č'óša·yi	a boil
ʔomamehkáčukh	ʔomakáču·khi	plowed up dirt

Although many exceptions must be listed, the sequence of rules which follow apply to the finals of nouns in forming the simple subject. Only unstressed vowels are affected. Intermediate stages are not shown in the examples. Four ordered rules account for the changes which occur in the object form of a noun when the subject inflection is added.

1. Final -e and -el become -ay- and -al-
2. All other vowels are lost
3. Final unstressed syllabics are lengthened if the preceding consonant was simple; lost, if the preceding consonant was complex
4. A few words have harmonizing vowels in the subject form.

Of the four rules only the harmonization rule need not be ordered.

1. -e after n, l, w, s, ʔ, k, k' > -ay
-el > -al
šóne > šóna·yi 'round tule'
c'úyel > c'úya·li 'crippled'
Irregular: hala·wétis > hala·wéta·si 'old man, husband'
2. -v > ø
huʔéme > huʔémi 'gentle'
3. -VC > harmonized irregularly
ʔowóʔukh > ʔowóʔo·khi 'unfinished clamshell bead'

ʔéyk'a > ʔók'o·to > ʔók'o·ti 'child' and 'children'

-C VC > C V·C /-CC. The vowel is lengthened if C is
 1 2 1 2 1

neither glottalized nor aspirated. Otherwise the vowel is lost.

chók'iš > chók'š̥i 'leather oak acorn'

mi·ʔéchis > mi·ʔéchsi 'your nephew'

kúpis > kúpi·si 'angelica root'

Exceptions:

hš̥iš̥ > hiš̥ši 'live oak acorn'

phik'e > phik'a·yi 'cough'

4. -C > -Ci

As has been suggested, the number of exceptions to these rules is large. The rules represent a very old but in part still functioning set of conditions under which the language operated. Basically, they represent an economy which permeates the language and under which sounds are categorized as heavy or light. Heavy syllables have as a first or immediately preceding sound either a glottalized or aspirated consonant. When a syllable expectedly heavy because of position with reference to stress has one of the light sounds as its first member, then the vowel was lengthened to produce a syllable of appropriate weight. The function of the anomalous sounds (Section 1) in this economy is not clear. It is possible that s and š̥ are in part leftovers from very remote coalescences of stops and fricatives (Section 9).

Other speculations offer themselves. The glottal and the h of the heavy syllables may both have originated in loss of an

earlier vowel. Cf. c'ó: 'redwood' < *c'ó + o, above. The -ay and -al from -e and -el of Rule 1 may represent not -e but only -el, where the present -e < *-el. Radin (1929: 138) gives alternate forms for the number 'ten', "maháís" and "mahális." The only form that can be elicited today is maʔháys. The argument is weakened by the fact that the Wappo had a decimally oriented system, that they kept certain records by tying up ten sticks in a bundle, and by the fact that the verb 'to count' has the root háy-, so that the word *maʔhális, if it ever existed, would have been under constant pressure to be incorporated into the háy- set of forms.

Plurals are formed by the addition of -te to the object form. The plural subject, of course, replaces the -e with an -i. E.g.,

mét'e 'woman' > mét'e·te (pl. obj.) > mét'e·ti (pl. subj.).

In a few object plural forms an alternation between -e and -a exists which may represent a kind of vowel harmony although the set is confusing in that it includes only words for persons.

k'éw 'man'	k'éwta 'men' (Cf. k'èwta míte·te 'short men')
píca·lí 'girl'	píca·lta 'girls'
kà·šíc' 'young man'	k'à·šíc'ta 'young men'
ʔéw 'husband'	ʔéwta 'husbands'

Because most kinship terms have final -a, it is tempting to conclude that there was a subclass of animate nouns in -a. 35E

However, a more careful examination of that corner of the language is necessary.

One small set of subject forms is aberrant and somewhat troublesome.

paired, alike, two of a kind	pasákis	pasákisti
square, cube-shaped	hoc'áy'a	hoc'áy'ati
oblong vertically	hočúl'a	hočúl'a·ti
ice	c'áni	c'ánti
white person	láyh	láyhti
sand	núy'	núy'ti
Indians	ʔonoʔšíʔ	ʔonoʔšíʔti
wind	šéʔi	šéʔti
ridge	k'ána	k'ánti
sunlight	tóš <i>i</i>	tóš <i>ti</i>

These forms are irregular in that their only subject form is in the plural. Some of them may have become irregular because their object forms end in *-i*, the subject suffix, as *c'áni*, *šéʔi*, *tóš*i**; a vertical oblong, cube, or ridge may be felt to be inherently plural, semantically plural; a few are probably mass nouns, for which a singular subject, as 'sand' *núy'*, would seem incongruous; *ʔonoʔšíʔ* becomes plural by agreement since the personal prefix *ʔón* 'people' must be inflected as a plural.

There are many other complexities both in the construction of plurals and in the noun, but the sampling given is detailed enough to give some feeling for the way the language functions.

5. PRONOUNS

The pronouns of Wappo are closely related to nouns in that some of the inflections of nouns are also inflections of the pronouns. The obvious categories of subject, object, and plurality are patterned closely after the noun and the deviations are somewhat less than those one might expect to find. The subject form has a preponderance of *-i/* in all except the first two persons singular. The *-i* is the most usual form of the noun subject suffix. Plurality is marked in both the subject and object forms of the third person plural by the *-t-*, as in the noun. The object forms have the usual variety of final vowels: *a, e, i, o*. Since *-u* may have occurred only in loans, it would scarcely be expected among the pronouns.

	Subject	Object	Possessive	Special Possessive
I	ʔáh	ʔí-	ʔi·-	ʔimeʔ
you	míʔ	mí-	mi·-	mímeʔ
someone a bit away	céphi			
someone here	héphi	té-	te-	témeʔ
someone over there near someone else	wéphi			mémeʔ
we	ʔísi	ʔísa	ʔi·sa-	ʔísa·meʔ
you (pl.)	mísi	mísa	mi·sa-	mísa·meʔ
they, these people	héko·ti	héko·to	héko·to	héko·tomeʔ
they, those people	céko·ti	céko·to	céko·to	céko·tomeʔ
they, those people over there near someone else	wéko·ti	wéko·to	wéko·to	wéko·tomeʔ

There are, however, a few unusual features. Sex distinctions are not made in the third person. The most usual third person pronoun, céphi, means 'he or she over there or somewhere out of sight but not necessarily very far away'. céphi is used to refer to persons of indeterminate sex whether present or absent. Two related forms, héphi and wéphi, refer to persons here, nearby, and to someone over there next to someone else, respectively. The morphemes cé-, hé-, and wé- occur in a large complex of demonstratives and noun substitutes and are further unique in that they quite frequently become verbs through the suffixing of a glottal stop. They function then as verb substitutes and differ from all other verbs in occupying sentence positions otherwise reserved for demonstratives. Cf. cè kàyi:na? c'ítí, 'that chicken bone', with cè? kàyi:na? c'ítí! 'That's a chicken bone'. The Spanish loan, gallina 'hen' is easy to identify. The natural inclination to say that cé? has no connection with cé is dampened by exactly parallel sets hé and wé, hé? and wé?, cé?e and hé?e and so on and on, all with partial semantic and phonemic identity. The number of items in these sets is quite large and I will not present them here. In the object form the three locations are abandoned and 'here', 'there', and 'over there by someone else' are all combined in one form, té- 'he' or 'she' or 'someone'. The possessive and object forms occur before their nouns and verbs and, if monosyllabic or disyllabic, act as phonological prefixes while, if trisyllabic, function as independent words.

tekúlpa?	his/her fault
ʔi·sakúlpa	our fault
cèko·to kúlpa	their fault

The object forms of the third person plural pronoun cèko·to, etc., preserve vestiges of the vowel harmony which occurs only in the interrogative verb suffixes today as a complete and viable system.

The pronoun is inflected with a selection of the suffixal postpositions already associated with the nouns. For instance, the -ma which occurs as an integral and rather untranslatable suffix in such a form as hólma 'woods'--compare hól 'wood, tree, stick'--is perfectly clear as it occurs with the pronouns ʔàh tè-ma méa-taʔ! 'I did it for him/her' (lit. I he/she for do past tense). There is an obvious problem as to whether the two morphemes are the same; with the noun the -ma functions like a derivational suffix, while with the pronoun it is a clear inflection. The suffix -thu indicates direction toward. lèltùnu? ʔi:-thu ta-mán-ʔiʔ! 'Bring the short stone pestle to me' (lit. stone-pestle short my to toward carry imperative). Accompaniment is expressed by -k'a which also functions as a sort of conjunction like English "and." Consider only misi:ʔik'a 'you (pl.) and me together', which can also be said as ʔá! miga:k'a depending on whether one starts out with 'you all' or 'I'.

Perhaps as interesting as any is the special possessive suffix -me? marking ownership. First of all, it offers one the startling pair of opposable utterances ʔime? mine and ʔi:mé? 'my

hand'. 'Hand' alone is mé?, but probably a different morpheme from the special possessive -mé?.

Although stress seemed important from the very beginning of my listening to Wappo, the importance of vowel length escaped me for a rather large number of days or weeks. There is enough automatic lengthening as in míaa:mé? compared with míaa to make one feel that length will somehow disappear as a distinctive element. It was with considerable chagrin that I discovered after several lengthless weeks that on the very first day I listened to the language I had written down: kú:te and kú:te?, 'rib' and 'Washington clam', respectively. Even so, the importance of vowel length was much easier for me to notice than aspiration. It was literally months before I could find and easily distinguish such a set as 'feather' khá:pe, and 'coffee' ká:pe?.

While -mé? served to clarify Wappo phonetics it also served to titillate in another way. Although I have come to the conclusion that it is really a rather simple element used to indicate things which belong to one which are not naturally owned as a birthright, it serves occasionally to expose the differences of Wappo from an Indoeuropean language, differences in the cultural categorization of the environment preserved in the language. So with -mé? we have such forms as:

<u>?lme?</u> túni·ku?	my dress
<u>?lme?</u> tása?	my cup
<u>tème?</u> híni	his/her watch

while in opposition to these we have

<u>?i·mé?</u>	my hand
---------------	---------

ʔi·čhúya	my house
tekúlpaʔ	his/her fault

The preceding forms seem fairly reasonable; more difficult are the following:

	ʔimeʔ wál	my enemy
	ʔimeʔ ʔón	my people, my family
but:	ʔi·ʔok'ánta	my maternal relatives

The pattern of possession is further complicated by the fact that in the third person singular all blood relations and some other closely related persons are marked by a different possessive form tēme:- which certainly appears to have more affinity with the possessive témeʔ than with tē-, the expected form. So 'his father' would be tēme·ʔáya, not *tēʔáya or *tēmeʔ ʔáya.

In English we have a difficulty in determining who is designated by "he/his" in such a sentence as "He gave him his book." We can, of course, insert an "own" so that we say "He gave him his own book," but the ambiguity is still there, although perhaps less strongly. In the event that we really want to say that he gave him someone else's book, there is no acceptable way of expressing the idea inasmuch as "He gave him someone else's book" is for most speakers only marginally acceptable. In Wappo this problem is taken care of in cases of the -meʔ class of possessives by a special form mēmeʔ, 'his/her own', which appears to be a repetition of the -meʔ morpheme:

cèphi mēmeʔ pápel' pèhkhiʔ He/she is looking at his/her own book.

cèphi tēmeʔ pápel' pèhkhiʔ He/she is looking at his/her (someone else's) book.

The postpositions *-t̥h̥u* 'toward', *-m̥a* 'for', and *-k̥'a* 'with' have already been mentioned. To these should be added *m̥iʔt̥h̥uwel̥a* 'toward your side'.

Perhaps the most important observation we should make of the pronouns is that while we have *c̥é*, *h̥é*, and *w̥é* and *c̥éʔ* and *h̥éʔ*, and so on, the third person *c̥éphi*, *h̥éphi*, *w̥éphi* seems somewhat unlike a third person subject, complex and probably periphrastic. In other words, we do not have demonstrative subjects of the shapes **h̥i*, **w̥i*, and **c̥i*. It seems most likely that **h̥i* at least once existed and perhaps survives today in the *-i* of the subject inflection. The absence of a simple third person subject form would be adequately accounted for should one be able to argue that the subject form had been incorporated as an inflection into the nouns it formerly followed.

6. VERBS

The verb in Wappo is easily the most important word class. It is here that creativity is possible, for the parts are so manipulable that the array of possibilities becomes truly attractive. There are just enough restrictions and sufficient freedom to make experimentation with ideas fascinating and rewarding to the speaker. Since I shall not control the verb for a long time, the easiest exposition is to reproduce one paradigm in a little detail. The reader will have analyzed a large part of the verb by the time he has gone through half of the set.

c'ésa·sa?	bathe	c'ése?	swim
c'ésa·sa?ha?	are (you)bathing?	c'ése·he?	are (you) swimming?
c'ésa·si?	bathe!	c'ésihya·mi?	going to go swimming now
c'ésista?	gave a bath	c'ésmista?	made/let go swimming
c'ésista?ha?	did (you) bathe?	c'ésmi·khi?	went swimming
c'ésisya·mi?	going to give a bath	c'ésmi·me?he?	are (you) going swimming?
c'ésisya·mi?hi?	are (you) going to bathe?	c'ésmi·me?	going swimming right away
		c'ésmi·yami?	going to go swimming after a bit
		c'ésta?	swam
		c'ésta?ha?	did (you) swim?

The list is by no means complete, lacking one form of the future, many question forms, and all negatives. Nevertheless, one sees the relationships between transitive bathing in the first column and the kinds of ideas in the second column. The indispensable verb marker, -/?/, is present in all of the forms; -ta? is suffixed to all forms which express completedness; -ya·mi? is really an auxiliary verb which has come to be attached as a complex verb inflection. It expresses futurity and is almost exactly translated by the words 'going to'. So far as I can determine, ya·mi? still occurs as an independent verb meaning 'going to'. It has the further phonological complexity that it sometimes sounds like yáwmi? instead of ya·mi?. When Laura Somersal was asked to repeat such a form or say it slowly she always corrected the sequence to yá·mi?. I came to the

conclusion that a phasing of the lip closure of the /m/ of yá:mi? made the later part of the /a·/ sound rounded. I accepted this solution as correct until recently when for napiáúhisya:mi? 'going to make bless the first fruits', I was given the negative napiáúhisyawlàhkhí?. This piece of evidence plus the very surprising c'ó < *c'ó + hól 'redwood', together with some other odds and ends, lead one to suspect that all long vowels in Wappo are the result of moderately recent changes in the language.

Our list also gives some examples of the question inflection formed by adding h, a vowel identical with the immediately preceding vowel, and the usual glottal stop of any verb form. Questions, of course, are also made by a slight raising of the pitch and additional terminal rise to the pitch of a simple declaration. We can be sure of the -is- infix which occurs as the causative element. -khí? indicates a state which exists. As such, it translates many ideas from a variety of English tenses and modes. Its semantic nuances are subtle and it is not clear what other forms of the verb it is associated with and what the combination of meanings produces in every case.

The Wappo verb has a few unusual features. While the speaker is mercifully spared a large number of forms for personal inflection, he does have to learn different words, suppletive forms, for the singular and plural of many verbs. If one person sticks his head out of a window one says ǎ'ulé?shkhí?; if more than one, huchóchkhí?. Repetition is sometimes taken care of in the same way. If one shoots once or throws one rock, that is háí:ǎe?; more than once is ǎy'i?. If I am sick, I am ǎhóse?.

If my whole family is sick we are wáy'ǎe?. A considerable number of verbs occupy themselves with the way animals stand or lie, move or crawl. Another set marks instrumentality and object, so that picking up a long object requires a quite different verb from picking up a flat object or a concave object.

Perhaps as ornate an area as any for the learner is the translation of 'there it is'. The Wappo had a multiplicity of ways of saying this, but there was, perhaps, no generic way of expressing "thereness" apart from certain physical characteristics of the object being located. It is the old case of having words for a great many kinds of snow and no word for just snow of any or all kinds. ^{37S} Here are some examples of the classificatory verbs of Wappo.

ǒóí·khi?	sitting, of a full cup, lamp or lamps, full containers, pails, bowls
kíu·khi?	there it is, of things which disappear like railroad tracks or roads in the distance
lómkhi?	sitting of pencils, sticks, potatoes or apples, things lying about in a bunch
máy'elkhi?	standing, of houses
wílkhi?	single thing sitting or standing in a spot.

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There are somewhere between thirty and fifty of these verbs. Sometimes, as in the case of ǒóí·khi?, they are indifferent as to singular or plural. Other times, as in the case of wílkhi?, singular and plural distinctions are marked. It is not unusual to have a plural form which subsumes several singulars. The reverse is rare or nonexistent. The deciding factor in these cases of plural suppletion as well as in other areas of

suppletion is probably the nature of the meaning of the root monosyllable. If a root names an object or concept that is singular and has produced a group of derivatives which are names for single objects and concepts, then it cannot be pluralized by numbers or inflections. So in our example, wil- is the root for bodies, describing single unitary shapes and forms. The idea of unity is so central that it is inconceivable that it could be conveniently pluralized. While this dictum applies in a subjective sort of way we can probably locate seeming or real exceptions. There does not, however, appear to be any other reasonable way of rationalizing the suppletions which appear in small but fairly important quantities throughout the language. Take, for example, the case of 'big' and 'little', túx'a and kút'i-ya, respectively. Their plurals are kóto-mela and núce-ta. Apart from the fact that the -ta of the plural of 'little' is a more or less regular plural suffix and that this plural suffix carries occasional evidence of an earlier but now fragmentary vowel harmony there is really nothing that can be said of these forms. Their existence does suggest that the Wappo may have allowed at least some parts of his universe to be arranged in black and white oppositions.

Among the multiplicity of features of the verb the imperative probably deserves at least passing notice. Suppletion for singular and plural is usual as it would have to be if it exists in other verb forms. So wehólo-ma? tells a group to stand up, and with melépu-ma? you tell an individual to stand. If several people come to your door you say téhú?te? 'come in' (lit. forward

head do it); if only one person knocks, the polite reply is tekúyei' (lit. forward crawl do it). It is amusing that these two verbs seem to suggest some very specific conditions of Wappo architecture. A group is told to stick their head in and an individual is told to crawl in. The reason behind the particular selection of singular and plural morphemes is obviously not that hú? and kúy- are in any sense inherently singular or plural. It is just that given the size of the house, no more than one might get in and a group is not invited to more than put their heads in. Such fantasies are probably dangerous. Certainly any house constructed in times for which there are records could easily hold several humans. It is true, however, that the doors were low and crawling was the way in.

Having someone do something for one or for someone else produces a series of verbs in -a:si?, as méssa:si? 'have someone do or make', napiǰúhta:si? 'tell someone to have someone (else) bless the first fruits'. This verb pattern has already been presented to us in the non-completive forms of 'giving a bath' c'éssa:sa?; 'bathe' c'éssa:sa?ha?, the question form, and c'éssa:si?, the imperative. The relationship of the two kinds of imperatives--this one, by which one asks someone to have someone else do something and the more ordinary variety by which one tells a person to do something--is not yet clear.

So far, nothing has been said about a rich supply of prefixes which often occur with either nouns or verbs. Pronouns occur in these positions, the possessives with the nouns and the object

forms with the verbs, but these will be excluded because they are sometimes prefixes and sometimes separate words:

hàyu ʔàh táʔmiʔ!	I'm petting the dog (lit. dog I pet)
hàyi ʔit'áʔmiʔ!	The dog is licking me (lit. dog me licks).

The order ʔàh hàyu táʔmiʔ! is acceptable, but ʔi- 'me' of the second example may not be shifted to any other position. If shifted to a position before hàyu, the sentence comes of mean 'My dog is licking.' The length becomes wrong since the possessive should be ʔi:-, not ʔi-. In spite of their slight differences, the possessive and object pronouns must have been one undistinguished set fairly recently.

39E

Since I have already given examples of the body-part instrumentals and the numeral prefixes, which occur with either verbs or nouns, no new examples will be presented. Prefixes which occur mostly with verbs include ǔ- 'down, off', ǔ-ǎ- 'out', ǎ- 'in, on, through', ǎ- 'spread out', ǎ- 'toward', and so on. The number of these prepositions is fairly high. It is impossible not to notice that noun modifiers follow and verb modifiers precede, and nouns have postpositions and verbs have prepositions. An earlier canon must have been noun modifier noun modifier verb. Noun prefixes would likely be verb-centered in origin. The possibility of verb-prefixed objects is found in the pronouns. Here are some examples of the verb prefixes.

ǔ'ahéc'eʔ	clean off, as a plate (imp.)
ǔ'ahʔél'iʔ	pick at, grub out, as a sliver (imp.)
map'óʔihsiʔ	will smoke, will have smoked, of cigarettes or a pipe

moʔohyók'ahkhiʔ landed, lit, of birds, airplanes

ʃik'a tek'óylaʔ↓ Get up closer this way. Cf. ʃik'a
ʔok'óylaʔ! 'Get closer together'.

There are many of these prefixes for which no clear meaning can be found. While the obvious ones have meanings as numbers, body-parts, instruments, or prepositions, their grammatical functions are very like the derivational affixes of English and present some similar problems.

7. WORD ORDER

Since Wappo is inflected for such vital elements as subject and verb and for some kinds of agreement in modification, word order is relatively unimportant. It undoubtedly serves certain artistic, purely stylistic ends. Sometimes the order can emphasize one element over another. By and large, there are few rules. The one prime rule is that the verb comes as near the end of the sentence as possible. ʔèyk'a huk'Àʃi:ya miʔ néʔkhiʔ! 'You have a pretty child' (lit. child pretty you have) is a usual kind of sentence. The major exception is in those sentences in which a demonstrative has been verbalized. In such cases the demonstrative retains its nonultimate position: ʔó! cèʔeʔ ʔi:ʔàcha kóvaloʔpi! 'Oh! That's my cousin from Covelo.' Here the verb is cèʔeʔ, consisting of the demonstrative cèʔe 'that person or thing not otherwise named', plus the verbalizing final glottal stop. The freedom of word order is evident throughout the language and serves as one of the most valuable criteria for determining minimal units. cé mùl' mena:céyeʔ! 'Eat up everything',

alongside of mùl' cé məns:céye? with the same meaning is fair evidence that mùl' and cé are independent units and not an unsegmentable whole. Such a commutation test plus the location of inflections are the principal determiners of word units for the language. In fact, almost any amount of shifting even of verbs will cause no discomfort to the native speaker except he will tell you that it sounds funny if you put some forms after the verb.

40E

It is possible to consider that the verb in Wappo is the final position in a sentence with an added glottal stop, providing the verbalized demonstrative is specially handled. The pronouns in questions are another exception: they may either precede or follow the verb. c'ése:he? mì? 'Are you swimming?' may also be mì? c'ése:he?, the more usual order. Word order as such matters very little to the native speaker, except to serve certain artistic, purely stylistic ends as noted above. It has little or no essential function except to make the native speaker feel that it's all backward in comparison with English. The native speaker, in repeating an utterance, frequently reverses or disorganizes the sequence of items, producing a fairly rich supply of examples of the indifference of the language to such order. The stereotype sentence patterns for the language are SOV and OSV. As we have already seen the subject form is distinguished by inflection. The object is unmarked.

The modifiers of nouns generally follow the noun: ʔóma:wən šic', lit. 'year new'; tùpu:lu? húc'i 'hole in a clamshell bead', lit. 'bead eye'; šíma nəwe:lə 'nasal as of vowels', lit. 'nose inside'; k'əw k'əy'el 'half breed', lit. 'man white'--note that a

white man, a non-Indian, was a láyhk'ew, lit. 'big, important, foreign' plus 'man'. láyhk'ew is an example of compounding. The nominal sequence k'ew láyh occurs but with the meaning 'rich man'. Similar changes in meaning also involve stress as in hólk'ó? 'mortar basket' compared with hòl k'ó? 'rotten spot on a dead tree trunk'. Of these, the first appears to be a compound, the second a nominal phrase. Note that the accentuation of simple compounds is ' and of nominal phrases ' or ``. An exception to the sequence NM occurs with demonstratives where the sequence may be either MN or NM. 'Eat up everything!' being either cè mùl' mena:c'éys?! or mùl' cè mena:c'éys?!. The fact that demonstratives occur alone as subjects of sentences may contribute to this anomaly. The fact that the simple demonstratives have lost their nominative inflection (Section 5) may be contributory, although this is certainly debatable.

8. MODIFICATION

A complex kind of agreement between noun and modifier is the most obvious mark of modification used in the language. In čhùyi hòpi mùl'i ǒy'ihkhi?! 'The two houses burned!' the words for 'house' čhùya, 'two' hòpi, and 'all' mùl' (> mùl'i) occur in the subject form. Ordinarily one would expect a subject plural of mùl' to be *mùl'ti, but the form either does not exist or falls victim to a common habit of the language. While the subject marker will appear at some point or at several in the noun phrase, plurality is not redundantly expressed in the presence of numerals or other words which are inherently plural or in the

presence of plural verbs. One can say that plurality, if marked, need be marked only once per utterance.⁴¹

The subject also need be marked only once. *ǎhùya mùl'* *ʔop'ònkhi ǎóy'ihkhiʔ* 'The closed up house burned'. Here, only the *ʔop'ònkhi* 'closed up' is marked as subject. Its object form is *ʔop'ónukh*. A similar case would be *ǎlma nèwe:li púǎeykhiʔ* (lit. nose inside subject hair is) 'There's hair inside the nose'. Sometimes either one or more units in the noun phrase may have the subject suffix, as *ʔòni hòpi léʔi:aʔ* 'Two people are running'. *ʔonhòpi léʔi:aʔ* is possible and may be preferred. A more complicated variety is *ʔáh | ʔonhòpi lèʔi:a náwǎiʔ* (lit. I, people two running see) 'I see two people running' where 'I' is the subject of 'see' and 'two people' is the subject of the verbal 'running'. This example clarifies a large area of possible problems. A series of words in *-i:a* would normally be translated as adjectives and would be considered to be a class of adjectives, *kúǎ'i:a* 'little', *kút'i:a* 'small', *ʔéni:a* 'very, much', and so on. However, note that in *mèyi ʔèni:a cóǎeykhiʔ* 'The water is foaming too much', *ʔéni:a* is not inflected as part of the subject as it would have to be if it were part of the subject noun phrase. The rule is that the last element of the subject noun phrase must be inflected. Within the language nominal and verbal may be separated on the basis of the necessity for the last element in the noun phrase to be inflected with the subject suffix.

9. ROOTS

Throughout these notes there have been references to the likelihood that at one time Wappo was a largely monosyllabic language of a kind that combines morphemes rather freely, that easily accommodates the intrusion of new ideas and artifacts.^{42E} It also seems to provide facile expression of imaginative or literary material or humor. Most of these features have been important until today. While the word for 'priest' was borrowed early in the last century, pádre?, a native word was already available, made up by stringing together a picture of one of the priest's common activities, k'á: may'hú? weháy'i:nek', lit. person self head counts owns, 'the person who can count his own head'. The reference to crossing oneself is obvious. Perhaps later, or perhaps at about the same time he came to have another name, k'á: ?ón yáwu:nek', lit. person people names owns, 'the namer'. Such a phrase as húy'me? t'ák'a 'red centipede', lit. coyote's carrying strap, may be simply a matter-of-fact reference to mythology, but when the verb 'to roll or move up and down of grass or fields of grain as the breeze moves through them' is literally 'the fawns are tumbling' one cannot doubt the poignant nostalgia that could underlie even simple daily chatter.

Given that the native speaker is still conscious of the not-too-remote monosyllabic nature of the language, we can easily see how frequently recurring sequences, cliches, and customary repetitions lead to the present inflected condition. The development is an iteration of the kind of occurrence which makes the

sequence *mit + hiš + hol + hol become a single word, miti-šohòl 'hazelnut bush' (Section 4). The items which are now part of a derivational or inflectional system are exactly the expected --although rarely the predictable--ones: the demonstrative *hi which does not exist except as the subject inflection, the numbers one and two, the words for hand, head, and foot, for water and wood, up and down, forward and backward, and so on and on to the end.

If all of this is true, it would be possible to separate out some recent phonological clustering by the simple process of searching for words which still happen to be monosyllables. Such items may very well in their simplicity represent a period during which some contemporary sequences had simply not yet developed. The idea is that the original monosyllables of Wappo in coming together to form more complex words may not only have lost sounds as in the case of -hól > -o, but that the present complex sounds may be the result of changes in final and initial consonants which combined to produce new complex sound units at the time when polysyllabic words were being formed. The discovery of restrictions on the phonological shape of the surviving monosyllables would be a powerful argument for the reality of the earlier, more-pervasive monosyllabicity I am claiming. The search is an interesting one and here I will give only one brief demonstration of it.

In the list which follows there are more than fifty nouns and even a verb or two which happen to occur more or less alone and uninflected rather frequently. Other monosyllabic words are

available but the present list includes all of the varieties of initial and final consonants that occur in monosyllabic words. ^{43S}

cé? 'that's'	míl' '"milo" acorn'
chách 'cold'	mún 'berry of <u>Carum kellogi</u> '
chów 'earth'	nán 'mouth'
c'éth	páy' 'only one, one alone, by oneself'
c'in 'wessel'	péc'
c'óth 'mosquito'	phús
c'ó· 'redwood'	pól' 'dirt'
c'úm 'cloud'	p'in' 'mustard greens'
čém'	p'íph 'valley or white oak acorn'
čóh 'come'	šáh 'tooth'
č'ákh 'redwing blackbird'	šíc' 'new'
hél 'fire, anus'	ší? 'clover'
hín 'moon, sun, clock, month'	šóth 'eel'
hóch 'throat, front of the neck'	thál 'what'
hól 'wood'	thú? 'there (nearby)'
hút' 'coyote, crazy'	tóm' 'fawn'
khón	túš 'bee'
kókh 'liver'	túy
k'á· 'person'	t'úl 'field, meadow, valley'
k'ék' 'crane'	ťím'
láyh 'great'	ť'éth 'briars'
lél 'rock'	wáw' 'albino'
máth 'long ago, years ago'	wéyh

mél 'acorn'	wíčh 'unidentified medium-sized white owl'
méth 'above'	yóh 'here, here you are, here it is'
méy 'water'	ʔáh 'I'
méʔ 'hand'	ʔúh 'already'

Now, if we view Wappo as having complex unit phonemes rather than clusters with h and ʔ, we find that the current native consonantal sound system looks like this:

p-	t-	ʔ-	c-	č-	k-	
-ph-	-th-	-tʰ-	-ch-	-čh-	-kh-	-h-
p'-	t'-	ʔ'-	c'-	č'-	-k'-	-ʔ-
-m-	-n-	-l-	-w-	-y-		
mh	nh	lh	wh	-yh		
-m'	-n'	-l'	-w'	-y'		
			-s	-š-		

I have gone through our list and placed hyphens in front of or behind each unit to indicate that it occurs either initially, or finally, or both in our list. In view of the restrictions on the elements in our table, it is obvious, I think, that both glottalization and aspiration have arisen originally out of juxtaposition of the following kinds:

CVC + hVC > CVCh + hVC

CVC + ʔVC > CVCʔ + ʔVC

CVʔ + CVC > CVʔ + C'VC.

The distributions indicated by the table suggest that all original p, t, ʔ, c, č, k have become glottalized or aspirated in final position. The continuants have resisted the formula CVʔ +

CVC, where C is a continuant, probably because the continuant is too closely linked to its vowel and because glottalization, like aspiration, comes after the consonant in Wappo. Clusters of continuant plus h are rare and recent, only -yh existing among our monosyllabic words. In any case it is the continuants which lag in adapting to the changes which were going on. Presumably, the continuant feature and the voicing feature are so central to a series of continuants that neither devoicing nor the interruption created by the glottal plosion are easy changes. There is a remote possibility that the fronted and backed t were once initial and final allophones of one phoneme.^{44E} The palatal and affricate series show subtle parallelisms with the two t series. Finally, one can suspect that the absence of s- in initial position is suggestive given the t- and c- [ts].

The demonstration is interesting in that there can be little doubt that most complex sounds must be viewed as developed or non-original. It is fairly rare that anyone is so fortunate as to be able to trace such a development.

If we now attempt to reconstruct the proto-Wappo sound system, excluding intonational features, we have the following:

p	t	k	ʔ		i	o
m	n	l	w	y	e	a
s	š		h			

The only unexpected move is the elimination of c and č. The evidence is difficult but an assumption that c is [ts] and č is [tš] accounts, in part, for the absence of glottalized forms of s or š and for the fact that c- is initial only and -s final only.

The vowel u was dropped as having been a loan in all of its original occurrences. Given the ease with which loanwords could be incorporated--déwél'sa? 'owe money' < Sp. deber + Wappo -sa? 'verb intransitive, indefinite', and so on--and given vowel harmony, a word containing the vowel y would possibly result in the intrusion of more than one occurrence of the y. However, because of the large number of roots whose vowel is y, this change of y to zero in the proto system is only remotely possible and is suggested pending further investigation. ^{45B}

In achieving this reduced final condition, we can point to the fact that the nature of proto systems will be to have more sound units than any member language if several languages are being compared, and either more or fewer sound units if the operation is internal reconstruction. Our example demonstrates the case in which reconstruction, internal reconstruction, that is, produces fewer sound units rather than more.

In the preceding paragraphs I have attempted to illustrate the utility of some kinds of internal reconstruction in illuminating the historical developments of one language. We cannot allow ourselves to pick only those points of history which suit our purposes, without distorting the truth, nor may we settle for any account of language which ignores the primary feature that is language, language change. There is where the action is.

Notes

1S

The editors of this volume are grateful to William Elmendorf and Shirley Silver for many insightful comments on previous drafts of the two papers published here. We are also indebted to Professor Elmendorf for bringing Wappo Notes to the attention of the Survey of California and Other Indian Languages and advising its publication.

Footnotes are arranged in a single number sequence but are marked according to origin. Unmarked notes are Sawyer's; E and S following a footnote number refer to comments made by Elmendorf and Shepherd, respectively.

2E

In February, 1969, I received a typescript copy of what Sawyer later told me was a second reworked draft of the Notes. I was intensely interested in this paper since at that time and for a few years before I had been working under Sawyer's aegis and with his advice on Wappo and its possible relationship to the three northern languages, Yuki, Huchnom, and Coast Yuki.

3S

See References for a complete list.

4E

Sawyer's writings on Wappo, which include unpublished data now in the Department of Linguistics, U.C. Berkeley, were derived from work with one informant, but this in no way lessens the value of the data or of Sawyer's presentation of it. Wappo Notes is the most lucid and comprehensive treatment of this language that we have contrasting with the large and extensive but confused grammatical treatment of Paul Radin (1929).

There are other differences worth noting between Sawyer's work and Radin's. Roughly 40 years separated Radin's field work of 1917 and the beginning of Sawyer's in the late 1950's. This

period saw the virtual death of Wappo speech, and its ultimate survival in one "last speaker."

There are dialect differences between Radin's material from the Napa Valley and Mrs. Somersal's speech from the northwest (Russian River) dialect region; these were probably not very significant except for a few lexical variants. However, speech level differences in the two bodies of information do seem to have been an important factor. Radin, in his 1924 collection of texts, obtained much material from Jim Tripo in a "high language" style used in traditional myth recitation; some of this was even obacure to his other informant and translator, Joe McCloud. This probably accounts for some of the grammatical and lexical divergence between Radin's and Sawyer's data. Mrs. Somersal apparently did not know this "high" style of myth narration (Cf. Sawyer and Somersal 1977).

Finally, an obsolescence and disuse factor was possibly important in restricting Mrs. Somersal's speech to a single level, although she apparently retained thorough competence at that level (Cf. also Elmendorf 1981a).

5E

After receiving the 1969 copy of the Notes, I several times urged Sawyer to work it up for publication. He agreed that he should do so and told me in December of 1986 that he was actively planning a thorough revision and enlargement, which his retirement in the near future would finally allow time for. It was only a few days after this last conversation that I had word of his sudden and untimely death.

6E

The relationship between Wappo and the northern Yukian languages was commonly accepted at that time as a genetic one and had been by most writers on Californian native languages since Stephen Powers' Tribes of California (1877). In time Sawyer's doubts about a genetic relationship increased although as late as his 1978 article "Wappo" in Volume 8 (California) of the Handbook of North American Indians he was still using the concept of a Yukian family to include Wappo as a divergent branch, and listed (p. 256) features shared by Wappo and Yuki. However, in an article published in 1980, entitled "The Nongenetic Relationship of Wappo and Yuki," he assembled evidence to show that the resemblances which had been taken as indications of genetic connection were due to convergence, borrowing, or shared areal features. This was his opinion, with some qualifications, up to the time of his death in 1986.

My contrary opinion is based on what I perceive as inadequate evidence supporting the nongenetic hypothesis, particularly in the 1980 paper, and on a mass of lexical, phonological, and structural data which I have been organizing and analyzing for some years. Most of this is as yet unpublished, and most of what I have published on Yukian (including Wappo) has assumed rather than sought to demonstrate a genetic relationship. The exception was an article "Features of Yukian Pronominal Structure" (1981). This did, I think, show that careful comparative analysis of pronoun structures in all four Yukian languages gives results compatible only with a genetic connection. My paper "Lexical and Cultural Change in Yukian" (1968) was not aimed at amassing

evidence, pro or con, on the genetic theory, although it was so cited in Sawyer's 1980 nongenetic relation article. It was rather a detailed lexical comparison of Wappo, Yuki, Huchnom, and Coast Yuki by assorted semantic classes, with cultural conclusions from the statistically skewed distribution of apparent cognates.

7S

Sawyer once explained to me what occurred when he felt as if she were "a woman from Mars": it was the idea expressed by the Wappo word c'il'ǰe which combines the idea of being stingy with keeping a secret. His explanation follows in the next paragraph of his paper.

8

The hyphens are inserted to indicate morpheme boundaries.

9E

The word for 'juice' was also noted by Radin (1929) and so is not just an ad hoc construction of Mrs. Somersal's.

10E

Cf. variant definitions of Wappo territory, in Sawyer 1965 (map), 1978 (Handbook map), Barrett 1908: 263-275, Kroeber 1925 (map), Merriam 1955, 1966-67.

11S

Cf. Mithun 1990.

12E

Cf. Radin's comment on the small number of Wappo speakers at the time of his fieldwork in 1917.

13S

As previously mentioned, Sawyer still believed that Wappo was a member of the Yukian family when he wrote this paper. Further, as our work on Yuki progressed, we discovered that Yuki was not a tone language as suggested by Uldall (1933), but rather a stress-accent language (cf. Sawyer and Schlichter 1984, p. 11).

14E

Of the alternative theories of Wappo separation from the northern Yukian bloc, I would favor that suggested by Oswalt

(1964: 419-420): an original Yukian dialect continuum cut off by westward Pomoan movement after c. 1000-500 B.C. Some archaeological evidence has subsequently appeared in support of this. Cf. Kniffen 1935; McLendon and Oswalt 1978: 287.

15S

Cf. Sawyer 1964a and 1964b.

16E

The derivation of šáwo:šukh in the Wappo phrase for 'sour milk' from Spanish jocogüe (which may not have been pronounced [šokóke] until the 18th century) from Nahuatl xococ 'sour' strikes me as strained and phonologically implausible.

17E

In variance to other formulations (e.g., Sawyer 1965: viii) both aspirate and glottalized occlusives are here treated as clusters, combinations with /ʔ/ or /h/, although glottalized ones are written C', aspirates as Ch. Sawyer notes /s/, /š/, /h/, /ʔ/ do not occur glottalized or with following /h/ except across morpheme boundaries. He notes that /ʔ/ "is the phonemic representation of at least a half dozen morphemes," while /h/ "occurs most commonly" in morphemes which contrast /CVh/ with /CV/.

18S

Listed in the Wappo Vocabulary (Sawyer 1965) as ʔék'a, 'child, baby, son'.

19E

The statement on the object form as the uninflected form may need some qualification, particularly with regard to pronouns.

20E

Final vowel noun markers appear thoroughly fused with roots (CVC-) as "indivisible units", but analysis (both Sawyer's and mine) suggests originally separate morphemes. Consequently I will be indicating them with a double hyphen in these notes.

21E

Supporting Berton's older form with -ma is the recording "lo-ko-ma" for 'bow' in a Wappo vocabulary "taken by Mr. J.R. Bartlett from 'a tribe living near Knight's farm, at the head of the valley toward Clear Lake'." (Powers 1877: 483, 485)

22E

Perhaps a still earlier underlying form would be *-a + ɣ, two originally separate morphs.

23E

Note the contrast of -i:-a, subject:object, in pronominal forms. Perhaps there is an old -i 'object' with subsequent spread of a conflicting -i 'subject', now normal in Wappo.

24S

Cf., however, Bright (1960: 231): "Linguistic data regarding the dog remain to be considered. This animal was not, to be sure, introduced to California by Europeans. Nevertheless, the words denoting it in the Californian languages show signs of extensive borrowing and lexical innovation..." According to Kroeber (1941: 6-7) dogs were "rare," "not kept regularly," an "occasional luxury element" among the Wappo and other central California tribes. The Wappo may have borrowed words for "dog" for this reason, not because dogs were not native.

25E

Sawyer also considers ʔéç=y 'creek' a loan, but there is a possible Northern Yukian cognate: Coast Yuki -ašy in Gifford (1939) "mixteliukašu" 'milky way' (lit. 'sky river'). The analysis of the term mixt-el-i-uk-ašy ('sky-adjectival-?-water-creek/stream') is far from certain; a suffix -el is 'adjectival' in Wappo, but I do not know of other evidence for it in Coast Yuki.

26E

Another possible candidate for a Wappo noun with final =y cognate with Northern Yukian forms is Wappo čéy'=y 'feces': cf.

the Wappo verb čéy'--e? 'defecate', and Proto Northern Yukian $*\text{sey}$, Yuki se?y (Lamb), Huchnom sey 'feces'; Coast Yuki sey (Harrington) 'shit'; sa' , sa'--e (Merriam) = [$\text{sey?} \sim \text{sey'-i}$] 'dung'. Arthur Anderson, one of the last speakers of Yuki, gave a Yuki form šay as 'dung'. There are peculiarities of sound correspondence in these words, but it is hard not to connect them in some way. However, Sawyer makes a strong case for $=\text{u}$ final nouns as borrowings in Wappo.

27B

The five examples in Sawyer's list which do not refer to plants or plant products include: cəkō:to 'they, those people'; həkō:to 'they, these people'; sólko 'mouse'; sót'o:ko 'elk'; wíci:lō 'meadowlark'. It may be significant that all denote animates, although vowel harmony may be the determining factor in these, as in ?ók'=:o:--to 'children' < ?éyk'=:a 'child' + vowel ablaut + plural suffix $-\text{ta/e/o}$.

28B

In his long, complex, and very interesting discussion of noun finals in $=\text{o}$, and other noun finals and suffixes putatively derived from plant names or plant products, Sawyer cites 22 examples with $-\text{o}$ final, of which 17 or just over 77 percent are plant names or vegetable products. He derives the $-\text{o}$ in these from a reduced form of hói 'tree' as a suffix, sometimes with aspiration of the stem final consonant as residue of an old compound with second element $-\text{hō(l)}$. My own analysis of compounds and affixes shows evidence that much affixation in Yukian languages generally, and not just in Wappo, has developed in exactly this way (cf. Elmendorf 1982a MS).

29E

Sawyer cites a remorphemization process where stem-final -C+h-/?- in compounds becomes -Ch-/-C'-. Thus, *čhíč + hó > čhíčh-ó 'pine sp.' where the stem final aspiration is from the original compound with *-hó. However, -hó continued to be used in compounds, mít-iš-hó 'walnut tree', mít-i:š-ó-hó 'hazelnut tree', thus giving two layers of 'tree' forms in the 'hazelnut' word (which more likely is the old native plant.)

30E

In such forms Sawyer derives the -iš-/-i:š- < híš-ó 'live oak'. I would prefer to interpret many of the examples as -iš(-) 'descriptive noun suffix'. A Proto Northern Yukian *-ihš 'of the nature of' may be reconstructible (see, e.g., Schlichter's 1985 reconstruction of the Proto-(Northern)Yukian word for 'quail' *tulihš.) In fact, I'm very dubious about the argument which would relate all cases of -iš(-) on vegetation words to the reduced suffix form of the word for 'live oak'. It might be simpler to interpret all these instances as representing the descriptive noun suffix -iš 'having the nature or quality of (what is denoted in the stem)'. This may account for the plant forms in -iš without the difficulties mentioned by Sawyer. A possible trouble with this alternate explanation comes from another Wappo suffix on adjectives with the form -iə and which also seems to mean 'having quality or property of.' Ultimately this will have to be reconciled with Yukian phonological rules governing correspondence of spirants.

31E

See my remarks in footnote 16E.

32E

The Wappo suffix -mə seems to have at least two distinct meanings, 'instrument' and 'location'. Although Sawyer gives e

list of words in which (referring to -ga) "any instrumental meaning has certainly become vestigial," in at least four out of the six examples this suffix seems definitely instrumental. The other two are locative ('ditch' and 'woods').

33E

This difficulty in determining "the lines between inflection, derivation, and compounding" was also observed of Yuki by Kroeber (1911).

34S

Native speakers of other American Indian languages use their word for "ground, land, territory" to translate "world."

35E

Sawyer's speculation on a possible subclass of Wappo animate nouns in -a is intriguing in view of a possible Yuki parallel: Sawyer and Schlichter (1984) list an animate suffix, on numerals and adjectives, -a, from one of Kroeber's publications, and Schlichter 1985 reconstructs *-a? as 'animate suffix on substantives' for Proto-(Northern)Yukian.

36E

This treatment should be compared with that of Elmendorf (1981). The possessives in Sawyer's list suggest a possessive suffix *-i added to object forms: thus mi- (obj.) + -i (poss.) > mi-. This would apply to first and second person singular forms. The first and second person plurals might be analyzable as, e.g., ʔi- (first person object) + -i- (poss.) + -a- (plural) + -a- (perhaps obj. suffix). This also suggests a relationship between -i- (old fossilized possessive) and -i (subject suffix).

37S

See, however, Martin 1986 and Pullum 1989. The editor is grateful to Shirley Silver for pointing out these two references.

38

wil- seems to specify items having some small mass.

Several of these stacked up would be mót'khi?. The noun mót'a, from the same root, means 'hill' or 'mountain'.

39E

The treatment suggests that Wappo object is in origin a referential, like the Japanese enclitic particle wa, indicating the topic of a statement, with the present Wappo subject form from an earlier ergative construction. Compare Yuki patient as subject constructions where the object is in the possessive form.

40E

It may be worth noting here that "the native speaker" refers solely to Mrs. Somersal.

41

I am still uncertain as to whether plurality can be left to context here--hence, "if marked."

42E

Sawyer's hypothesis that Wappo reflects an earlier monosyllabic condition is important for comparative Yukian. My impression of Yuki (and Kroeber's earlier) is similar. See also Sawyer 1981.

43S

Sawyer's manuscript did not provide glosses for the list of monosyllabic words; some glosses were provided by William Elmendorf, others I found in Sawyer (1965) or Sawyer's slip files. The following items remain problematical:

khón - Perhaps khón' 'said, reported' listed in Sawyer 1965.

péc' - Cf. phetéc'ǎe? 'slip, as when one's foot is slipping'

(Sawyer 1965). Sawyer's slip file also shows the following entries: péc'Iǎkhi? 'being slick or shiny', péc'E'ʔkhi 'glaring, blinding', péc'Iǎ 'slick'.

phús - Sawyer's slip file shows the following items which may be related: phú.su?/mèyphú.su? (lit. water blower) whale; the "mèv"

may be redundant.

túy - Sawyer (1965) lists túyhuwela 'sky'; or perhaps it should be túy' 'truth'.

wéyh - Sawyer's slip file lists hé mawèla:si? wèyh! ?Ime? thùme? temè?si?! 'Take these back and give her some of mine.' I have not been able to determine the meaning of wéyh from this sentence.

44E

Other writers on Californian languages have suggested an areal spread of /t/ as a distinctive sound. Wappo and Northern Yukian show fluctuating agreement in sounds of the /t/ and /t/ series. All this may indicate a fairly recent distinction of the two.

45E

Sawyer's internal reconstruction of an earlier ("proto-Wappo") sound system results in a phonology with fewer units than in the present Wappo language. My own tentative attempt to reconstruct a proto-Yukian system has had an opposite result, although I feel that careful internal reconstruction of the three Northern Yukian languages might show results parallel to Sawyer's for Wappo. Shepherd's work with comparative Northern Yukian (Yuki, Huchnom, Coast Yuki) shows a proto-system very like the phonologies of the present languages, not surprising in view of the obviously close relationship within the Northern Yukian branch (Schlichter 1985).

THE COLORS OF WAPPO AND YUKI

In 1969 Berlin and Kay's Basic Color Terms appeared. In it they argued (p. 4) that basic colors are distributed in languages in the following sequence:

White		Green	Yellow			Purple
	Red			Blue	Brown	Pink
Black		Yellow	Green			Orange
						Gray

Table 1

Berlin and Kay had observed that if a language has only two colors, those colors would be black and white; if three colors, they would be black, white, and red. If four, add green or yellow; if eight, and so on up to eleven, add purple, pink, orange, and gray.

Few theories about language survive unscathed, and so, during the first decade after their publication, black and white in two-color systems were further defined to include warm and cool tones respectively; gray appeared alternatively and prematurely with or after black and white in some languages, and blue combined with green to form grue and add its third to the green-yellow axis (Kay 1975: 258-60).

White		Grue	Yellow	Green		Purple
	Red				Brown	Pink
Black		Yellow	Grue	Blue		Orange
						Gray

Table 2

Berlin and Kay had said of their observation (1969: 1-2):

The research reported here strongly indicates that semantic universals do exist in the domain of color vocabulary. Moreover, these universals appear to be related to the historical development of all languages in a way that can properly be termed evolutionary. . . The prevailing doctrine of American linguists and anthropologists has, in this century, been that of extreme linguistic relativity. Briefly, the doctrine of extreme linguistic relativity holds that each language performs the coding of experience into sound in a unique manner. Hence, each language is semantically arbitrary relative to every other language. According to this view, the search for semantic universals is fruitless in principle. The doctrine is chiefly associated in America with the names of Edward Sapir and B.L. Whorf. Proponents of this view frequently offer as a paradigm example the alleged total semantic arbitrariness of the lexical coding of color. We suspect that this allegation of total arbitrariness in the way languages segment the color space is a gross overstatement.

The idea of universality is one that is somewhat difficult to accept, since universals may, in large part, be ways in which our environment or the human physical mechanism force their wills upon us. However, the Berlin Kay observations suggest some interesting possibilities. If indeed the evolutionary aspect of the sequencing of colors holds, then it follows that within a language black and white are older than red, red is an older form than green, blue, and yellow, and so on. So that, if color systems in two languages have not suffered major upheavals, one can look at them and determine, from the relationship found, a measure of the degree and kind of relationship between the languages and something about the likelihood of genetic relationship. It is this possibility that I want to follow up. Along the way, of course, I will find out a number of facts about the

languages I am comparing. Any natural sequence, whether universal or not, is a superb tool for clarifying the massive and confused data that language pours out on us. However, because the languages examined here are moribund, it will be impossible to map in detail the color areas that their color vocabulary once delineated. Caskey-Sirmons and Hickerson note (1977: 365), for instance, that

... there are parallels in the contrast between monolinguals and bilinguals; in that (a) the boundaries of color areas mapped by bilinguals are less stable than those mapped by monolinguals; (b) the total areas mapped by bilinguals are generally large; and (c) the foci of the bilinguals' categories are consistently more variable than those of the monolinguals.

The languages I am dealing with, Wappo and Yuki, being dying languages, would show all of these as well as more serious problems. Specifically one can identify these qualities of bilingual situations as being pieces of evidence in the death of languages.²

And specifically, because these are dying languages, we would expect to find another effect of the sequencing of colors. I noted above that one of the changes that has occurred in the Berlin Kay system is the recognition that for languages having only black and white the color area is not arbitrarily chopped in two. Rather, color space is separated into warm versus cold tones. An obvious concomitant, however, is that at any point in time for any language the basic color terms can simply divide the available color area, however one wishes to symbolize it. Although Berlin and Kay present color as a left-right linear sequence, it might be more closely symbolic to present the sequence with black and white, the presence or absence of hue, as polar

extremes as in the classic three-dimensional schematization offered, for instance, by Chapanis (1965: 329). Here black and white mark the point of two joined cones with the colors arranged in a circle at the joined bases of the cones. Such a schematization highlights the possibility described by Heinrich (1972: 221) that for those cultures located in the far north or far south, black and white, or the presence or absence of light, may far outweigh the function of black and white in areas of the world not so remotely located. The fact that color systems may vary in such a way agrees with my feeling that the universality, if any, in such systems must lie in the degree of similarity of the phenomena available for classification to each language and on human physical limitations.

To the extent that the basic terms are few, they are likely to cover rather wide areas of color. In Yuki, for instance, ǎ'a:l, the word for 'white', included for some of its most recent speakers the yellow or brown of "leaves in the fall," a wide and anomalous stretch, since yellow is properly part of white but brown should have been part of black, and probably was, except for the lighter browns of leaves which in many cases were yellow first. When a new color is added to any color system it will be potentially ambiguous, since the color term whose area it divides itself off from may, in other dialects or by reborrowing or by the nearness in time of the change, continue to represent the color for which the new term exists. So for any language such ambiguities should exist at the recent edge of the system. In the case of a dying language this ambiguity can represent the

point at which the color system ceased to expand. Such ambiguities existing in more than two colors ought to be evidence of dialect differences or severe catastrophe.

Wappo and Yuki are two languages of central California that have always been considered to be genetically related. I have never agreed to this relationship: it has not been finally proved, although it has been impossible to deny that a relationship of some kind has existed between the two, since they share a great number of words, morphemes, and features. However, the unusual quality of this relationship has sometimes been noted. Powers (1872: 306) said of the Round Valley Yuki:

Their language is like none other in the vicinity, but singularly it is closely related to that of the Ashochemies (Wappos), whose former habitat was in the mountains, from the Geysers down to the Calistoga Hot Springs.

Kroeber said (1925: 217-218):

Wappo speech, however, is exceedingly different from Yuki and Huchnom. It differs considerably more than Spanish from Italian or German from Norwegian, perhaps almost as widely as German from English.... But it is necessary to be conservative, for while a certain proportion of Yuki and Wappo words are not very different, the majority are totally dissimilar in appearance, and a member of one group would certainly not have caught anything of the drift of a conversation held in the speech of the other.

The Wappo color system to which I was first exposed contained the following terms:

White
k'áy'el

Red	Grue	Yellow	Brown	Gray
chipe	šik'átis	wici·lo·-hèla	chipe čùtu·kuʔiš	pót'e

Black
có·we

Table 3

If the genetic or evolutionary interpretation of the Berlin Kay hypothesis is possible and no catastrophe has occurred, then black and white, and perhaps red, should be ancient monolexemic forms permitting no semantic interpretation except the central one of their color denotation. This is indeed true for black and white. có:wé 'black' contains the morpheme có:w- 'black' and the -é derivational suffix which is not segmentable except by reference to other words in which it is segmentable. chípe 'red' is related to chípí:liq? 'reddened, rusted' which establishes the existence of the root chíp- and the affix -e. 'White' k'áy'eí is somewhat less recalcitrant in that the -eí does occur as a final affix in a number of adjective-like words such as síwheí 'disorderly of hair', túpeí 'stiff', thúpeí 'breakable, delicate', but k'áy- 'white' like có:w- 'black' appears not to occur in any other words of the language. The -eí in its occurrence in verbs marks a kind of distributive.

Wappo does not have a distinct blue and a green but it does have 'grue' ǫik'át'is always called 'green' by my native speaker, Laura Fish Somersal, but probably a bluish color most frequently. ǫik'át'is appears to consist of three morphemes: ǫi- 'black or blue', -k'át' nonrecurrent and unidentified, and -is, a causative verbal suffix marking nouns derived from causative verb forms. ǫi- recurs in one word ǫi:ǫáwo 'black bread' but ǫáwo 'bread' is a borrowing evidenced by its final -o---final -o in Wappo is restricted to trees and bushes and a few other forms mostly borrowed--and appears to be from a Nahuatl word for sour

3E

milk, connected with Spanish jocogue 'buttermilk'. xi-, as we shall see later, may also be borrowed. -k'áti- might be associated with the word for 'frog' kátiik', but is difficult because of the non-glottalized -k- and -i-. 'Grue' is more complex than black, white and red, but more basic than the color words which follow it.

With yellow the Wappo system collapses, for wíci:lo:-hèlè 'meadow lark breast' is no longer monolexemic, basic, or reliably indigenous, but seems to be a metaphor and partly borrowed. 'Meadow lark' wíci:lo is probably a borrowing because of its final -o and its nonrecurring root wíc-. Berlin and Kay would throw it out for several reasons, but particularly because it is descriptive rather than being arbitrary. My own experience has been that such metaphors characterize areas in a vocabulary that have suffered severe catastrophe and in this case the metaphor may result from the moribund state of the language. But for our purposes I will not throw it out. I note that the basic system has disappeared. Something else has taken over.

The color brown continues the collapse with a phrase chipe čútu.ku?iš consisting of the word for 'red' chipe plus an untranslatable complex modifier čútu.ku?iš. The -iš is a common nominal suffix, but the rest of the form is obscure. The recurrence of čú- in wímačúte 'mistletoe' is not helpful.

Thus far our prediction that the sequence of color words would recapitulate a genetic progression running from old and primitive to recent and contrived has been exactly lived up to. Only one color remains to discuss in Wappo, gray. Logically gray

should be polymorphemic or even a phrase such as brown. It might be metaphoric. But what do we find? A simple form, pót'e, genetically to be placed with chípe 'red' and có:we 'black' whose structure it exactly parallels.

It appears that Wappo had gray prematurely, and the word may not be truly a basic color term since it may be related to púih 'dust'. Nevertheless it so closely parallels chípe 'red' and có:we 'black' that one accepts it, however hesitantly, and inserts it after black and white in the sequence. The most distressing fact, however, is not the existence of premature gray, since Kay (1975: 261) reports having found other examples of that, and since it is not surprising that a word for gray might evolve in some color systems soon after black and white.

The troubling fact about Laura Somersal's Wappo color set is that there is no form for blue, although brown exists. The evolutionary sequence does not allow brown or possibly gray until black, white, red, green, yellow, and blue have been identified.

Here the Wappo case should have rested, but an examination of Driver's Wappo Ethnography--he was working with Mary Eli, the mother of Laura Fish Somersal--uncovered four color terms that are no longer being used (1936: 196). Mary Eli was blind and could not be considered the best authority on colors, yet she gave Driver a 'yellow' pót'e, 'yellow blue' pòt'e šik'át'is, 'gray and brown' k'énich, and 'pink' hunnášis. Moreover for her, šik'át'is was 'blue', not 'green'.

White			Grue				
k'áy'el			(>Blue)				
	Red	Yellow	Green		Brown*	Pink	
	chípe	pót'e	šik'át'is	pòt'e	šik'át'is	k'énich	humnášis
Black							
có'we							

*Including gray

Table 4
The Wappo Colors of Mary Eli

The information given by Somersal's mother does not change the stage of color development to which Berlin and Kay would attribute Wappo. It is one of the unusual systems which "appear" to encode blue before green, for šik'át'is is the Eli word for blue. The grue of Table 4 becomes blue once a green has been identified, but the original focus of šik'át'is must have been grue. Wappo still has only four or five basic colors. The amazing and unbelievable thing is that for Mary Eli pót'e is 'yellow', not 'gray'. It is obvious that wici:lo:-hèla 'yellow', literally 'meadow lark breast', must be some kind of latter-day make-do form supplied to fill up spaces in a color system changing in the last stages of its life. Gray rather than being premature becomes a late confusion in a system which originally had no such color term. But one must still face the uncomfortable fact that a mother and daughter, the last two competent speakers of Wappo--presumably strong links in the passage of this language through time--confuse gray and yellow. I reacted by assuming that the mother with pót'e 'yellow' must be right and that the daughter with the same word for 'gray' must be wrong, and I devised various fanciful ways of accounting for the strange phenomenon. None was satisfactory. The least obnoxious argued

that Wappo 'yellow willow' equated with an English 'gray willow' might have induced the younger speaker to translate Wappo yellow into an English-Wappo gray. Moreover, I felt further constrained to accept Mary Eli's term for yellow, pót'e, because the word for 'ripe', pót'i, in Laura Somersal's dialect, appeared to contain an obvious recurrence of the root pót'- of Eli's 'yellow'.

At the same time Somersal's mother's use of k'émich for 'gray and brown' was not particularly comfortable. Having used basic yellow for gray, Laura Somersal and other speakers sharing the same later minidialect had had to supply not just a substitute for yellow but also for brown, the daughter's chipe čütu.ku?is for which the mother gives k'émich. The earlier version of k'émich 'gray and brown' appears to be a much-to-be-preferred form in terms of simplicity, basically a single word consisting of a root k'ém- and a suffix -ich. Moreover, the inclusion of gray and brown in one term implies, from the point of view of the Berlin-Kay observations, a color system that has reached a stage including a separate term for brown but has not yet differentiated purple, pink, orange, and gray. These colors would probably be distributed among the existing terms and gray would be included in the earth-tone brown spectrum. The real problem for k'émich as a term for brown and gray is that k'émich is not a Wappo word. k'ém- does not occur as a root in other forms in the language and -ich is not a recurring meaningful suffix. Wappo k'émich is related to Yuki k'imš - k'imš and incorporates the Yuki suffix -ič '-like, -ness, -able' except that the form in Yuki does not include that Yuki suffix and must

have itself been borrowed in Yuki and possibly normalized in Wappo by bilingual speakers. k'émich does occur in the daughter's dialect, but as a secondary term in the meaning 'gray' only in 'gray-hair spring' k'émich meynán. Brown--the mother's k'émich includes brown--would make no sense here, of course, 'brown-hair spring' being relatively meaningless. The local superstition still exists that if one touches the water from Gray Hair Spring one's hair becomes gray.⁴

A further complexity arises from Mary Eli's pòt'e šik'át'is 'yellow blue', a term which described the green tones but which implies that šik'át'is 'grue' would at that stage have been reduced to the blue variants primarily, and indeed for Mary Eli šik'át'is is 'blue'. It is easy to see why the daughter would not have used pòt'e šik'át'is for to her it would have been 'gray green' and would have offered little in variety to a system already impoverished and troubled by change. Apparently in the later vocabulary, earlier 'blue' šik'át'is becomes 'green' as part of the confusion in which pòt'e 'yellow' is lost. 'Green' is the usual contemporary translation of šik'át'is, our original 'grue'. The existence of pòt'e šik'át'is did not result in the expected reevaluation of the system--šik'át'is should have become blue--and does not exist as a color variant for the daughter generation. The last generation lacks a word for blue. One begins to get a feeling that between the generation of the mother, Mary Eli, and the daughter, Laura Fish Somersal, the Wappo color system suffered a catastrophic set of changes.

From the mother we have one term left, hunnáǰis 'pink', but pink ought not to exist in the system. If we accept that gray is premature in many languages and may have been in the process of appearing prematurely in Wappo, then one would expect that most languages would develop gray first or at least concurrently with the oranges, pinks, and purples of its class. But in Mary Eli's dialect gray is still mixed in with brown at the point when she gives us a separate word for pink. One is forced to assume that pink was the first color to evolve in the pink purple orange gray set for Mary Eli, or that it is somehow an intruder, a neologism, a borrowing. And, indeed, as we shall see, it was all of those things.

Having rationalized the contributions of the mother and the daughter we might expect that at this point the Wappo color system would have remained, that nothing more could or need be said, but again we are wrong.

I would not have considered the Wappo color system in any more detail if I had not done some work on Yuki, a language that had long been considered as belonging to the language family in which Wappo had been placed. Even then, that I became interested was a matter of chance. I had gone north to check on one of those rumors that was so frequently current, that a speaker of this or that extinct language had surfaced at a village just slightly north of the furthest away one could possibly want to go and do field work. Specifically I wanted to meet Arthur Anderson of Covelo who was said to speak a little Nomlaki. Eventually I found Arthur Anderson and sat down with him, and the first

utterance he produced for me included a word for fish, which he pronounced hgw. I was struck with surprise and wonder, because I knew the word, having seen it in a word list somewhere or other and had wondered how it would be pronounced. I had never actually expected to hear it! It was not Nomlaki but Yuki, a language that was supposed to be already extinct.

In the months which followed I worked with Arthur Anderson. I went back to read the appropriate works on Yuki, among them Foster's A Summary of Yuki Culture and it was there that the Wappo color system came back into focus as a subject of interest for me. In a list of Yuki tribal names Foster (1944: 161a) includes Ukpótnom' 'Lakeport Pomo', literally 'water gray people'. no? is a Yuki root for 'to live, to be at' and the -m is a locative suffix. I was as much surprised as when I first heard Arthur Anderson say the word for 'fish'. I had constructed an entire rationalization for Laura Somersal's use of pót'e for 'gray' instead of 'yellow'. She was the last speaker, she was confused, she was forgetful, and so on. But here in a language which was presumably cognate with Wappo and whose vocabulary, when it produced similarities, might be representing relationships at least two or three thousand years old--here I found "pot-" with the meaning 'gray'. I was forced into the position of feeling that the older speaker representing an earlier stage of the language was less accurate and representative than her own daughter a generation later. Obviously this could not be. Both of them had to be right. A search for northern Yukian color terms produced the following items for Round Valley Yuki: .lsl

White

č'a·l

Red

ʔə(·)si(·)č

~ ʔə(·)si·ʔič

t'uf (F)

Blue, Green

si·k

sičal (F)

Yellow (and

Brown for F)

poč

p'əl

Gray

poč'-

k'ims

~ k'imš

suk (F)

Black

šičik

6

Table 5
The Yuki Color Words

Examining this group of color terms clarified the problem of Wappo poč't'e for both 'gray' and 'yellow'. Both or at least one of the two must have come from Yuki influence on Wappo. But such a difference, if one form is used by one speaker and the other by another, cannot represent a genetic difference 2500-3000 years old. Such confusing differences in usage would have been resolved 2500 years ago. I conclude that there may have existed two dialects of Wappo--four have been claimed--or that there has been relatively recent Yuki pressure on the Wappo language, leading to the existence in one dialect of items that represent unresolved problems. Since the difference between Yuki poč 'yellow, brown' and poč't' 'gray' exists only in the underlying form, we are forced to assume that the influence was relatively recent, and favor an almost contemporary bilingual problem for the Wappo speakers.

7E

Comparison of Wappo and Yuki colors answers other questions. Originally Wappo šič'át'is was labeled 'grue' and in the older set of Mary Eli it has become 'blue'. For Mary Eli 'green' was poč't'e šič'át'is, literally 'yellow blue', which, of course, are

8

the colors we mix to produce green. The Wappo term, šik'át'is, may have been heavily influenced by the Yuki word for blue, si_k, or black ši?ik.^{9E} Originally I was troubled by the unexpected glottalization of the -k'- in Wappo šik'át'is, since the only possible related root in Wappo is kát'- of 'frog' which does not have a glottalized -k'-. However, given that šik'át'is becomes 'blue', not 'green', one can easily see the possible influence of Yuki blue or black on the Wappo form, and the influence would certainly be recent, running as it does, counter to the normal Wappo word canon--Wappo would divide such a form š_i - k'át' - is,^{10E} not šik' - át' - is.

Two sets of parallelisms between the two color systems deserve comment and investigation. One of these is 'green'. In both languages green is made up by comparing two other colors. In Wappo green is 'yellow blue' poť'e šik'át'is and in the later dialect šik'át'is. In Yuki green is šičəl (F), literally 'blue white'. In both languages blue is encoded before green. Comparatively, the Yuki term is more primitive based as it is on one of the really primitive colors č'a:l 'white' and implying occurrence prior to poť 'yellow, brown', the tones in poť being too dark to be combined with blue to produce a workable green. This use of č'a:l 'white' in šičəl also suggests that yellow was still unseparated from white at the time green entered the system. Moreover Yuki red must be a very limited and specific color because, unlike most languages, the Yuki term means 'blood-like' and does not include the yellow orange tones. If it had, green would not have been made up out of blue and white.

The other parallelism lies in the awkward placement of brown in both languages. The late dialect of Wappo makes brown a variety of red, chipe čútu.kuʔiš. The earlier divides brown off with gray in k'émich.¹¹⁸ Yuki lumps brown with yellow, thus demonstrating that blue and green are earlier arrivals in the system than yellow. However one wishes to interpret these facts, it appears that brown is an embarrassment to both languages. There is also the strong hint that brown was a variety of rust or red, chipe, in at least the later Wappo dialect. The poʔ and poʔ'- of Yuki must mean that yellow, brown and gray were once one color area for the Yuki just as one may assume that the blue and black of Yuki, si:k and šiči:k, were once one, since the names for gray and blue appear to be derived or analogized from yellow-brown and black, poʔ'- < poʔ and, although less likely, si:k < šiči:k, as if gray were called "yellowish," and blue, "blackish."

The real collapse of Mary Eli's color system, the older Wappo system, comes with pink. It has been left to this point in order to allow us to look at the Yuki terms first. The fact that for Mary Eli gray and brown are one form, k'émich, should mean that the purple-pink-orange-gray state of development is just ahead--or, if you wish, has not yet been reached. When Harold Driver asked her for pink she had to reach far into the depths of her memory or her imagination. That she found any answer at all is surprising. But the word she offered is a marvel indeed. hunnéšis 'pink' consists of the Wappo morpheme húm- 'to be away from' and -našis 'red' borrowed from Yuki ʔasič or one of its

variants, which itself can be analyzed as 'blood-like'. (The Yuki nasalization of the η is reflected by Wappo n .) The Wappo, of course, did not have a blood-colored red from which to derive pink. Wappo red, chipe, as we have seen, was a rust tone which recurs in brown, chipe čútu:kuʔis, and the word for 'rusted', chípi:taʔ.^{12E} In the older dialect of Wappo brown still included gray. Yuki, conversely, had no proper brown, still lumping it somehow in with yellow. Whatever we may make of it, Mary Eli's humnáǎis was undoubtedly a form which she had heard, sometime, somewhere. néph, 'blood', of her own language had never been used of color.

A clue as to Wappo Yuki chronology arises out of the terms for white. Yuki č'a:l should be cognate with Wappo k'áy'eł, however difficult the relation may be. But Yuki does have a form k'i:lél.¹³ Since k'i:lél is closer to k'áy'eł than č'a:l, it appears that k'i:lél is the cognate form, unless it was borrowed.^{14E} Whenever a language has two words for one idea, one form is frequently borrowed and the borrowed status is marked by occurrences only in restricted environments. Since k'i:lél in Yuki is restricted to a small number of uses having to do with non-native culture, I assume that k'i:lél was borrowed from Wappo k'áy'eł. Its occurrence in huk'i:lél 'white person', literally 'eye white', exactly parallels Wappo húc'i k'áy'eł 'white person', literally 'eye white'. The only other use in Yuki which has turned up is the use in the name for a western type village. It appears that the term for Caucasian, white person, is partly borrowed and partly translated from Wappo. The fact I want to

emphasize, though, is that one doesn't borrow terms for Caucasians until there are Caucasians around. Contact between Wappo and Yuki may have occurred only a few hundred years ago. If we go back and look at the contemporary Wappo system of Laura Somersal, we find that it lacks blue although it has terms for other colors that are not normally named until blue exists in the system. The later system has fewer terms than the earlier system of Laura Somersal's mother, Mary Eli. Kay (1975: 269) noted that "... there is an overall tendency for speakers with more advanced basic color term systems to be younger." In this case the younger speaker has fewer color terms (see also Caskey-Sirmons and Hickerson 1977). A shift in the meaning of pòt'e from 'yellow' to 'gray' has eliminated the earlier word for 'green' pòt'e ǎik'át'is; 'yellow' has been created metaphorically, and 'gray' borrowed somehow or other. 'Brown' has been created descriptively.

I believe the collapse of Laura Somersal's color system to be due to her mother's blindness. The mother knew a color system but she never used it. She had no occasion to talk about colors she couldn't see. Her daughter had to piece together colors from whatever other sources were available to her and they were very few. Nevertheless, the system of Mary Eli has in even greater quantity than that of her daughter all of the marks of language death.

Let us look now one last time at Wappo and Yuki as cognates in a Yukian family of languages. If Berlin and Kay are correct in their evolutionary hypothesis, and I believe they are, then I

would expect genetically related languages to have common terms for black, white, and red, and possibly yellow, green, or blue. I would expect though that it would be more likely that yellow, green, and blue, and also brown, pink, gray, purple, and orange might not be related. In the case of Wappo and Yuki, black, white, and red are totally unrelated. But on the other hand, yellow, blue, green, pink, and gray seem to have resulted from some contact between the two languages. Contact in the areas of developing colors in the latter reaches of the Berlin Kay system are exactly what one would expect in non-genetic or borrowing kinds of relations. I conclude then that these two color systems cannot be considered cognate and that it is likely that the languages in toto cannot be genetically related.^{15E}

A great deal has been said against the Berlin Kay hypothesis. It is likely that deviations from their predictions represent local catastrophe in the languages in question rather than a counter case to their argument. On the other hand, I believe that what they have described is not so much a language universal as a natural pattern to which all languages adhere to the extent that their exigencies are uniform. Perhaps just such natural patterns are what universals are. It is obvious that the Wappo and Yuki color systems would be incomprehensible without the work of Berlin and Kay.

Notes

1

A clear exposition of the procedures later to be used by Berlin and Kay is presented by Lenneberg and Roberts (1956) in The Language of Experience, a Study in Methodology.

A summary discussion of the relation of language universals to linguistic relativity and color research is presented by Brown 1976. My own preference is to consider that at least three conditions coexist: language does indeed affect our world view, reality does shape language, and the human psychological and physiological equipment also impose their restrictions or creation on language. Thus we may find that it is in part the structure of the human brain that is ultimately crucial to the universality of the foci for orange, purple, gray, and pink, the other colors originating primarily out of environmental pressures. For example, color systems vary with geographical location, particularly north and south. Thus I would find different motivations for the eleven "universal" color foci depending on which factors are primary in each case, but in all cases at least all three sets of phenomena are continuously involved.

2

Elmendorf (1981a) describes the current condition of Wappo and Yuki, a situation which Sturtevant (1947: 3) used as a definition of the death of a language--a situation in which one or fewer speakers survive. "A corollary of the final clause of the definition is that a language cannot function normally unless there are at least two speakers of it. When only one speaker remains, the language may be said to be dead."

3E

Cf. my note 15E to "Wappo Notes."

4

There is little danger now as k'émich meynán today is an oily hole in the middle of a parking lot on the north side of Healdsburg. As late as in the sixties, it lay a few yards south of hòc'a mót'a 'sweathouse hill', the two, sweathouse and spring, making a silent forgotten mock-tableau of life a century earlier.

5

In his Lexical and Cultural Change in Yukian (1968:8), Elmendorf suggests that Wappo must be separated from Yuki by a minimum of 2500-3000 years. Later he felt that the separation must have occurred even earlier.

6

ə is a nasalized vowel. (F) means that the form is given by Foster (1944) only. t'uy, Foster's t'uí, also means 'pitch'. The color term is probably secondary, having been derived with the reddish-yellowish pitch of trees in mind.

poí'- for 'gray' is hyphenated because it is only an underlying form. Yuki does not allow word-final glottalized stops so that this form is pronounced po'í with weak preglottalization or no glottalization in isolation; hence perhaps the confusion between gray and yellow in Wappo.

The variation of k'ims - k'imǽ is one between speakers: Arthur Anderson uses the former, Minnie Fulwider--the next-to-the-last speaker--used the latter.

7E

Cf. Proto Northern Yukian *pot' 'gray, brown', *pot'il 'ashes, dust', Wappo púth 'dust'. The Northern Yukian terms mean 'ashes' as derivatives of 'dust' (i.e., 'earth ashes'), but are glossed as either. Similar forms occur in Lake Miwok which shows considerable interborrowing with Wappo: cf. póteł 'white ashes from forest fire': póto-, potóopoto 'to be gray or pale': póta

'to be gray, cloudy': poʔáka 'to be gray (said of hair), gray hair' (Callaghan 1965).

8

Kay (1975: 258-61) found that the colors yellow, blue, and green could not be arranged in any orderly way in the original Berlin-Kay theory. It has occurred to me that the problem, while undoubtedly more complex, may arise from the salience of green in most languages and from the need to have yellow or blue exist before green can be realized as a color.

9E

There is an alternative analysis. The word ordinarily cited for 'black' in Wappo is có:we which shows no discernable correspondence with the Northern Yukian terms. The Wappo element which might be cognate with forms in Northern Yukian languages is a prefix ǰi- 'black' in ǰi--śáwo 'black acorn bread' and elsewhere. It has the same shape as a number of other CV- prefixes which appear to be reduced from original CVC forms by attrition of the second C. Comparative evidence suggests that all or most of these developed, in both Wappo and Northern Yukian, from compounded stems CVC + CVC, where the first element developed prefix form by loss of the final -C. This would indicate comparability with Yukian words for 'black', Yuki ǰiʔik, Huchnom śek', and Coast Yuki ǰi_k'; it suggests Northern Yukian -k' as a stem-formative not operative synchronically. A possible occurrence of the stem-ending -k' in Wappo is seen in the word ǰi--k'át'is 'blue, green, unripe': if so analyzed, the morphemic elements would be ǰi--k'--át'--is. -is could be an adjectival suffix 'having the property or quality of', but it is difficult to find a satisfactory meaning for a root -(?)át'- or -k'át'-. Terms for

'green, blue' ("grue") in other Yukian languages are also obviously connected in some way with terms for 'black'; cf. Yuki siʔik 'blue, green', Coast Yuki (Merriam) siʔka, Coast Yuki (Harrington) sik 'blue'. The Wappo 'grue' could conceivably analyze as xi:k'-aʔ'-is, except that there seems to be no Wappo element *-aʔ'- as either root or affix.

The Wappo xi- prefix may in its length preserve a trace of the laryngeal in the Northern Yukian words for 'black'. This is a common process taking synchronic shape: -VC' > -VʔC > VʔVC > -V.C. It is seen in ablaut forms especially in Yuki.

There may be another word for 'black'. Cf. Wappo hin-i ma-súph-ih-khiʔ 'moon is dark, it's the dark of the moon', hin ma-súph-ikh 'last month' (hin 'moon, sun', -i nominative, ma- 'in, on, through', -súph- 'dark', -ih nonrepetitive, instant condition, -khiʔ declarative). In the expression 'last month' which may be interpreted as 'the moon not visible any more', the attributive phrase ma-súph-ikh (perhaps 'gone dark') is used with the object form hin. With -súph- 'dark' in these Wappo forms compare Northern Yukian words for 'blackbird': Proto Northern Yukian *šip, Yuki šup- ~ čup-, Huchnom šip-am, Coast Yuki šip- ~ šep-. Most of these have -VC suffixes in the cited forms, suggesting Wappo -súph- and Northern Yukian šip as possible old color terms for 'black'. This might resolve some of the difficulty in the comparison of terms for 'black' above.

10E

Cf. Proto Northern Yukian *sik 'green, blue'; Yuki sik 'green, blue', seh (Powers) 'light green', sič-al (Foster) 'green'; Huchnom se-k 'blue, green'; Coast Yuki sik ~ siʔik

'green or blue'. Coast Yuki siʔik from sik' is a regular synchronic development. All Northern Yukian terms may be ablaut developments from *šik', 'black'. The Wappo final -is seems to mean 'like, having the quality of'.

11E

With Wappo k'ém=ich compare Yuki k'im=š ~ k'im=s. In my reconstruction of proto-Yukian the k':k' correspondence (in Wappo sometimes č' or c' before a front vowel) reflects *q'- (or just possibly *kw'-), m:m and -c:-š are regular, as are the root vowels -é:-i-. The apparent elision of a suffix vowel in the Yuki endings needs explanation, but there are other examples of CVCVC:CVCC.

I am not aware of other occurrences of a root word k'ém-/k'im- in either Wappo or Northern Yukian. The (apparent) suffix element -ich:-š could be "adjectival," i.e., "like k'ém/k'im." This purely hypothetical meaning might point to k'ém/k'im as a color term: 'white' or 'whitish' or 'pale', 'faded', or the like.

The alternate Yuki -s ending is Arthur Anderson's, and this informant's phonology is often at variance with other sources.

12E

Cf. lel-čhip=e 'magnesite' ("stone-red"). See Sawyer (1965: 61-62) for a discussion of ritual practices and ideas surrounding the Wappo use of magnesite. I hypothesize that the Wappo term is a reflex of an original PY term for 'red', although the phonologically corresponding Northern Yukian forms all denote just 'magnesite'. These are: Yuki šip (Fulwider), šip' (Siniard); Huchnom šehp ~ šeʔp; Coast Yuki šip ~ šip: with Proto Northern Yukian reconstructed by Schlichter (1985) as *šihp. The Coast Yuki forms are also glossed 'red earth', 'red face paint'.

Merriam glossed his Coast Yuki "sheep e-sits" as 'red face paint', which suggests "sheep" as a color term 'red'.

Because the Northern Yukian terms for 'magnesite' correspond phonologically with Wappo 'red' it is possible that an original 'red' has become specialized in meaning in Northern Yukian. The current Northern Yukian terms for 'red' are all clearly derivative (e.g., Yuki ʔas-i^{c} 'blood-like') and were perhaps innovated when the semantic shift of original 'red' to 'magnesite' occurred. Word taboo, known for both Wappo and Northern Yukian peoples, may have played a role. Assuming this sequence of events is correct, 'red' may have been a primary color term in Proto-Yukian along with 'black'.

13

The occurrence in Miwok of the form kilil 'white' does not make this example any easier. Miwok certainly functioned in some way in the form which this word for white has in Yuki.

14E

Instead of Proto Northern Yukian $*\text{c}^{\text{h}}\text{a}$ 'white' (Schlichter 1985) I would reconstruct $*\text{c}^{\text{h}}\text{a}$ or $*\text{c}^{\text{h}}\text{a}^{\text{h}}$ based on Yuki $\text{c}^{\text{h}}\text{a}$, Huchnom $\text{c}^{\text{h}}\text{a}$, Coast Yuki $\text{c}^{\text{h}}\text{a}$. Wappo CVC-el corresponds to Northern Yukian CVl in other examples, but the $\text{k}^{\text{h}}:\text{c}^{\text{h}}$ correspondence is unusual. There are only four examples of this correspondence, unlike the rather numerous cases of $\text{c}^{\text{h}}:\text{k}^{\text{h}}$ (or $\text{c}^{\text{h}}:\text{k}$), represented by 15 examples, perhaps reflexes of Proto Yukian $*\text{k}$ fronted to c^{h} in Wappo (and to c in a front or high vowel environment).

The Yuki word for 'ghost' $\text{hul-k}^{\text{h}}\text{ilil}$ may be analyzable as 'eye-white', but there is only a slight probability that this

term for 'white' is reconstructible for Proto Northern Yukian. Even if it is, its correspondence with the Wappo term is peculiar. The present evidence does not permit the reconstruction of a Proto-Yukian term for 'white'.

15E

In this excellent and stimulating paper, Sawyer apparently dismissed the possibility of regular sound correspondences between Wappo and Northern Yukian. I have worked out regular correspondences on the basis of some 308 comparable sets and, while a number of puzzles remain, especially in forms involving laryngeals /ʔ/, /'/, /h/, and /·/, the majority of cases yield a reasonable diachronic theory of changes from Proto-Yukian forms to Wappo on the one hand and the three Northern Yukian languages on the other. Taken in toto, these phonological comparisons, together with the structure of roots and stems, and with shared irregularities reflecting parallel "fossilized" morphological processes, leave little doubt in my mind that we are dealing with genetically related languages.

I must admit that the relationship, except within the Northern Yukian branch, is in no way a close one. My own current best estimate of the time of (linguistic) separation between Wappo and Northern Yukian languages runs to something like three to four thousand years. If valid, this might account for some of the oddities encountered in direct lexical comparisons of our not overly abundant Yukian vocabularies. Compare the following color terms:

	Wappo	PNY	Yuki	Huchnom	Coast Yuki
BLACK	śi·-	*śik'	śik ~ śiʔik	śeʔk' ~ śe·k	śi·k'
DARK/ BLACKBIRD	-suph-	*śip	śup ~ čup	śip	śip
GRAY	pot'=e	*pot'	poʔ'-, po·t'	pot-a	po·t, -pot'-
GRAY HAIR	k'em=ich		k'im=ś ~ k'im=s		
GREEN/BLUE	śi=k'=nʔ'-is	*śik'	śi·k, seh, sič=al	se·k'	śik', śiʔik
MAGNESITE/ RED?	-chip=e	*śihp	śi·p	śehp śeʔp	śi(·)p
WHITE	k'ay'-el	*čal [č'al'/ č'aʔl?] *k'i·l-el?	č'a·l ~ čal	č'al	č'al' ~ č'a·l ~ č'al

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Abbreviations

AL	Anthropological Linguistics
AR	Anthropological Records
IJAL	International Journal of American Linguistics
UCPAAE	University of California Publications in American Archaeology and Ethnology
UCPL	University of California Publications in Linguistics

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