Number 9

Occasional Papers On Linguistics

Proceedings of the 1980 Hokan Languages Workshop, Held at the University of California, Berkeley, June 30-July 2, 1980.

Department of Linguistics
Southern Illinois University
at Carbondale

OCCASIONAL PAPERS ON LINGUISTICS

Number 9

PROCEEDINGS

OF THE

1980 HOKAN LANGUAGES WORKSHOP

James E. Redden, Editor

Held at

University of California, Berkeley

June 30-July 2, 1980

Department of Linguistics
Southern Illinois University
Carbondale, Illinois

Library of Congress Catalog Card Number

81-52453

PREFACE

Unfortunately, everyone who presented a paper at the 1980 Hokan Languages Workshop was not able to prepare a final version for inclusion in this volume. All papers in this volume except two were presented in an earlier version at the 1980 workshop. The papers are arranged in the order they appeared on the program.

The paper by Birgitte Bendixen was presented at the 1979 Hokan Languages Workshop. The camera-ready manuscript for her article arrived at the editor's office more than three months before the publication deadline. The editor is so used to having to call up contributors and begging them to get their manuscripts in that he totally forgot Dr. Bendixen's paper was in his files and left it out of the 1979 volume. The editor humbly apologizes for this oversight. The second paper by Pamela Munro was discussed in part at the 1980 workshop, and the editor asked her to include it in this volume.

The participants of the 1980 Hokan Languages Workshop gratefully acknowledge all the work done by Leanne Hinton and several of her students, which made the workshop run so smoothly and enjoyably. We also wish to thank the College of Letters and Sciences at the University of California, Berkeley, for a grant to help defray the costs of holding the workshop.

Copies of the 1977, 1978, and 1979 workshop proceedings are still available from the Department of Linguistics, Southern Illinois University, Carbondale, IL 62901. The volumes for the 1975 and 1976 workshops, which appeared in the SIU-C series, University Museum Studies, are now out of print, but copies may be obtained in microfiche or hardbound volumes from ERIC Clearinghouse on Languages and Linguistics, Center for Applied Linguistics, 3250 Prospect St., N.W., Washington, DC 20007.

The 1981 Hokan Languages Workshop will meet jointly with the Penutian Language Conference at Sonoma State University, Rohnert Park, California, June 29 to July 2, 1981. The proceedings of the 1981 workshop will appear in Occasional Papers On Linguistics in early 1982. For the first time, the papers of the Penutian Language Conference will be published in the same volume as the Hokan papers. Copies may be ordered from the Department of Linguistics, Southern Illinois University, Carbondale, IL 62901.

James E. Redden
Carbondale, June 1981

CONTENTS

Bendixen, Birgitte
Aspects of the Rhythmical Structure of Cocopa 1

Oswalt, Robert L.
On the Semantically Interlocking Nature of the Kashaya Verb Prefixes:
The Case of si- 'water, drink, tongue' 20

Caisse, Michelle
Northern Pomo Verbal Suffixes 39

O'Connor, Catherine
Some Uses of Case-Markings in Northern Pomo 48

Gordon, Lynn
Evidentials in Maricopa 59

Munro, Pamela
Two Notes on Yuman 'say' 70

Webb, Nancy M.
Some Notes on Hokan Person Terms 78

Klar, Kathryn
Proto-Chumash Person and Number Markers 86

Redden, James E.
Notes on Walapai Syntax III 96

Watahomigie, Lucille J., Jorgine Bender, & Akira Y. Yamamoto
Possession Expressions and Semantic Classes of Nouns 100

Munro, Pamela
Mojave k and m: It Ain't Necessarily So 124

Bibliography 130

Aspects of the Rhythmical Structure of Cocopa

Birgitte Bendixen
University of California, San Diego

Introduction

This is a report on preliminary findings from a study of the rhythmical structure of Cocopa in spontaneous narratives (1). The data is drawn from a narrative related by Sam Miller to Professor James Crawford in 1967. Crawford's published syntactic and morphological analysis (Crawford, 1976) is preserved (although a slightly different notational system is used). In addition, a phonetic transcription (in IPA) was made marking pause and syllable boundaries.

Crawford has claimed (1966, p.28-29) that Cocopa is 'stress timed', i.e., that sentences having the same number of stresses have approximately the same duration. (2) As an example, he cites the following sentences: (Hyphens in the Cocopa sentences indicate syllable boundaries.)

1. nyá:c c-nyár la-ká:ym á:c yuṣ
   I=s yesterday town 1-go-c 1-exist-evid
   "I went to town yesterday"

2. a-yá:-piny ṣáy c-cšá:-cm ṣ-nya:yá:m
   tree-dem there 1-pl-plant-sr dem-then-happen-m
   "We planted the trees over there.'

3. nyá:c wáły mán spác
   I=s house-in 1-get-up 1-go-out-prf
   "I went out of the house"

Each of the above sentences contains four stressed syllables, and, hence, by the stress timing principle, they have approximately the same duration. As Crawford notes, the sentences differ in the number of unstressed syllables they contain. Sentence 1 has three unstressed syllables, 2 has six unstressed syllables, and 3 has no unstressed syllables. The presence of unstressed syllables , thus, should not affect sentence duration.

Crawford's stress timing claim describes the rhythmical structure of Cocopa in terms of the number of stresses in a

'sentence'. It is difficult to isolate 'sentences' in spontaneous Cocopa narratives -- partially because of the narrative speech style which links phrases with connectives; and also because the concept 'phrase', a verb phrase or a noun phrase, is a more easily identifiable structure in Cocopa syntax.

In this analysis, the sentence boundaries noted by Crawford are presented in the phonemic transcription. In the discussion of the rhythmical structure, the term 'sentence' will be avoided in favor of the more general concept of 'semantic topic' comprising one or more phrases which express a unitary semantic concept, e.g., a paragraph.

Stress timing, in its more general usage, describes listener perception of a special type of speech rhythm -- listeners hear stress as occurring at regular intervals. The isochronous interval between stresses remains at present a perceptual judgement, one that has not been verified by acoustic analysis. The present analysis of Cocopa narratives seeks to define some phonetic and phonological bases for the perception of stress timing.

The Basis of Speech Rhythm

Stress timing is one type of rhythmic structure. What is rhythm? 'Rhythm' refers to the temporal structure of speech utterances. It deals with the relative durations of units at many levels: the segment, the syllable, the word, the sentence and the paragraph. Phonology has traditionally acknowledged the distinctiveness of duration at the level of the segment, i.e., the phoneme. Poetic meter is based on duration of syllables. Speech production views syllables as the minimal articulatory programs used in temporally (and articulatorily) structuring an utterance.

How is an utterance temporally structured? The question of speech rhythm has been studied in the field of speech production by Kozhevnikov and Chistovich (1965) and Fowler (1977). Their description of speech production follows.

The abstract string generated by the grammar is a linear concatenation of abstract segments (i.e., phonemes) which still must be translated into motor commands for articulation. The abstract string is stored in Short Term Memory (STM) while it is parsed into articulatory programs. (A 'program' is the set of instructions which are sent to individual muscle fibers in the speech apparatus to initiate the articulation of a given speech unit.) The Central Nervous System does not have rapid enough control of muscle activity to permit segmental control of speech. The articulatory programs comprise integrated motor commands for syllable production. Each articulatory program also contains one stress. The

stress is the organizational focus around which the motor commands for the syllable are organized.

The motor commands within each articulatory program do not follow the linear sequence of segments in a syllable. Differences in the length of the cranial nerves innervating the speech muscles, and the different inertias of the speech articulators themselves, i.e., how much effort is involved in moving them, require that the neural command be of a rather different linear order than that of the segments of the word. This requires that the abstract string produced by the grammar undergo a restructuring before articulation. Thus, at the time of temporal structuring, the linear sequence of phonemes in the abstract string is 'lost'.

The articulatory programs that are created in the Central Nervous System result ultimately in the production of syllables. These articulatory programs must be sequentially ordered to follow the intended sequence of syllables in the word and utterance. The articulatory programs are sequentially sent out to the vocal tract musculature for production. The rate at which the programs are sent out corresponds to the rate of speech, i.e., speech rhythm.

As was noted above, the temporal structuring of an utterance occurs while it is stored in Short Term Memory. STM has a limited storage capacity, it can hold approximately seven (stressed or unstressed) syllables at a time. An abstract string that is too long to be stored in STM as a unit must be entered into STM in seven syllable chunks. 'Left-over' material in the abstract string is loaded into STM after the preceding seven syllable portion has been sent out to the vocal tract.

Stress is the organizational focus around which motor commands are structured within the articulatory program. On the speech production level, i.e., outside the grammar, the stress internal to each articulatory program is synchronized with the beats of a 'neural rhythm generator'. (The neural rhythm generator emits pulses at regular intervals. All rhythmic motor activity, tapping a finger or speaking, is temporally coordinated with these rhythmic beats.) On the level of speech perception, linguists assign stress to syllable peaks, usually vowels. The implicit claim of the above speech production model is that stressed vowels are synchronized with the rhythmic beats of the neural rhythm generator. An unstressed vowel will not constitute an independent articulatory program because it has no stress. Remember that all articulatory programs require stress so that they may be rhythmically coordinated with the neural rhythm generator. Unstressed syllables, then, are appended to a preceding or following stressed syllable's articulatory program.

According to Fowler (1977), the phonetic reduction

observed in unstressed syllables derives from their 'second class' status in speech production. Articulation is targeted from stress to stress. Unstressed syllables are 'deflections' from the major articulatory path. Similarly, pre-tonic consonants should have more precise articulation than post-tonic consonants because they are directly en route to a stressed vowel. Post-tonic consonants are more reduced because they occur after the goal ,i.e., the stressed vowel, of the articulatory program has been achieved.

What are the implications of the speech production model for the surface phonetic form of an utterance?

I. Co-articulatory phenomena (assimilation, simplification, etc.) are viewed as artifacts of the changes brought about when an abstract string is restructured for speech production in STM. The articulatory programs will integrate the motor commands associated with each syllable into those of neighboring syllables. Successive articulatory programs will similarly be integrated into one another. Maximum efficiency will cause the greatest simplification to occur in unstressed syllables or post-tonic consonants. These predictions are borne out in the Cocopa data. (See Nasal Merger, Nasal Deletion, and Consonant Cluster Simplification below.)

II. The theory outlined above divides speech production of a linguistic utterance into the seven syllable 'chunks' that can be stored in STM at a given moment. As seven syllables are stored together for restructuring into articulatory programs, co-articulation phenomena will obtain within these seven syllables. An utterance containing more than seven syllables will be restructured in successive seven syllable chunks. The speech production model predicts that no co-articulation phenomena will occur at the juncture between successive seven syllable chunks. The possibility of pauses separating each group from the next is left open. This is the norm in the Cocopa data.

III. The speech production model describes stress timed languages when it synchronizes stresses with the impulses of a neural rhythm generator. The synchronization of stresses with rhythm impulses explicitly attempts to account for isochrony between stresses. Note that this explanation of stress timing does not consider rhythmic structure to be specified in the grammar. (Segmental length and the location of stress are, of course, permitted.) Stress timing is not linguistic because it is created outside the grammar while the utterance is stored in STM. The rhythmic structure of language is assigned in the same fashion as other rhythmic behavior -- by coordinating it with rhythmic beats from a neural impulse generator.

In the introduction Crawford's description of stress timing was summarized. The second part of the paper described a proposed model describing the physiological basis for stress timing in language. In this last section, I would like to return to Cocopa and examine Cocopa stress timing.

The speech production model explains the rhythmic aspects of stress timing as deriving ultimately from the rhythmic impulses of the neural impulse generator. Yet, as I noted in the introduction, 'stress timing' remains a perception on the part of listeners that has not been verified by acoustic analysis. I would like to suggest that listeners 'reconstruct' the intended speech rhythm. They are able to interpret the acoustically varying intervals between stresses as isochronous with the aid of accompanying phonological and phonetic cues. These cues are the overt co-articulation phenomena accompanying stress timed speech production and the location of pauses within the larger utterance. The idea of a speaker 'reconstructing' a speech rhythm parallels the familiar 'analysis by synthesis' model of speech perception wherein a listener can comprehend an utterance despite speech errors, false starts, or extraneous external interference.

Pauses

Three types of pauses occurred in the data: major pauses, minor pauses and syllable-internal pauses. Generally, a pause separated each 'chunk' of speech temporally structured in STM. This does not mean that a pause occurred at seven-syllable intervals, but rather that the amount of material between pauses was in fact surprisingly regular, occurring at 4- to 7-syllable intervals. The documentation for this observation is included in the discussion of the semantic function of the individual pause types.

Major and minor pauses are intervals of silence separating two successive speech utterances. A major pause is at least twice as long as a minor pause. The absolute duration of major and minor pauses varies across speakers, but their relative durations remains constant.

Major pauses occur at the boundaries between semantic topics. Major semantic junctures occur at the beginnings and endings of direct quotes, or between direct quotes from different persona in the narrative. Major pauses usually occurred at these points throughout the narrative. For example: (3) ("//" marks a major pause boundary, "/" marks a minor pause boundary.)

4. [/ pᵊ-kʌt pa-wí:-lʸᴵt // mõ: nʸ-xó:l /]
ppukát pa:wí:c 'ac "mu: nyxu:l
p-p-u-kat pa:-wi:-c 'a-c mu: nyxu:l
3o-*-3-meet 3o=3-see-c 3=say-c well younger=brother
(Coyote) met up with him, looked at him, and said, "Well, you

[mᵊká-mà:x myú:-wᵊ // hĩ: / nʸá:dʒ-]
makám ma:x myu 'a "ʂʂ, nya:c
makam m-a:-x m-yu 'a nya:-c
where 2-go-irr 2-exist 3=say uh=huh I-s
where are you going," he says "Uh huh,

[mám / nʸadʒ-ma:m-ᵐpᴵlʸ mám-pᵊ-'á:m-pnʸ:]
ma:m nya:c ma:m mapíly ma:m pa'á:mpiny
ma:m nya:-c ma:m mapily ma:m pa-'a:-m-piny
now I-s now now now dem-1=go-from-dem=o
[as for] my going along now,

[-ve-rá:r nʸé: pᵊ-'á:mʂ]
nyawí: 'ará:r nyay pa'á:mʂ, :::
nyawi: 'ara:r nyay pa-'a:-m-ʂ
thing work 1=look=for dem-1=go-m-adv
I am on my way to look for a job, ..."

Major pauses also occur at boundaries between semantic topics. In 5, a major pause precedes the introduction of a new persona, Coyote:

5. [// nʸa:dʒ-ma:m / pnʸa:dʒ-ma:m /]
nya'ác ma:m pnya:c ma:m.
nya-'a-c ma:m p-ny-a:-c ma:m
then-3=say-prf now *-then-3=come-c now
When he said it, he then went on his way.

[nʸᴵ-ve-rá:r u-nʸé:-pá:m // xç-pᵊ-pᴵc]
nyawí: 'ará:r unyáy pa:m xʈpa pi:c
nyawi: 'ara:r u-nyay pa:-m xʈpa pi:-c
thing work 3-look=for 3=go=along-m coyote dem-s
As he was on his way looking for work, this Coyote

[bi-nʸa-wé: / pᵊ-kʌt pa-wí:-lʸᴵt //]
pnya:yí:c ppukát pa:wí:c 'ac
p-nya-:-yi:-c p-p-u-kat pa:-wi:-c 'a-c
dem-then-3-come-c 3o-*-3-meet 3o=3-see-prf 3=say-c
was coming, met up with him, looked at him, and said,

[mõ: $n^{yɪ}$-xó:l /]
"mu: nyxu:l, ...
mu: nyxu:l
well younger=brother
"Well, younger brother, ..."

Minor pauses, '/', usually separate phrases. Minor pauses are not phrase boundary markers. Almost any word in Cocopa can constitute a phrase. This is especially true in narratives where long strings of concatenated verbs tend to appear with few intervening nouns. (Note that the Cocopa verb is inflected for pronominal subject and object.) A minor pause occurring after a 'chunk' of (STM-structured speech is very likely to occur at a phrase boundary. Minor pauses, '/', occur at phrase boundaries. Not every phrase is bounded by minor pauses. In long semantic topics, minor pauses occur frequently in the initial portion of the topic. They gradually include more and more phrases, reaching a maximum (of about 10-11 syllables) at the end of the topic. This gradual increase in the number of syllables per 'chunk' in long semantic topics is called 'accelerative timing'.

An example of the 'accelerative timing' found in long semantic topics is presented below:

6. [// n^{y}o-$w^{ɪ}$-má:m / n-$n^{yɪ}$-kɑ́:r / mɑ:l /]
pnyawãm ma:m, nya nyakũ:r Mu:l
p-nya-wa-m ma:m nya nyaku:r mu:l
dem-then-1=sit-sr now day long=ago Mule
I'm here now, so one day long ago, Mule,

[mɑ:l vas-t^{r}í:$t^{ʔ}$ k^{r}i-yu-mí:$k^{ʔ}$ // pn^{y}a:c]
Mu:l pa:'ás, pi:c xyumí:k pnya:c
mu:l pa:-'a-s pi:-c xy-u-mi:k p-ny-a:-c
Mule 3o=3-call-pl dem-s *-3-grow=up then-3=go-c
they called him, he kept on growing

[mam mɑ́:$r^{ɪ}$-$v^{ɪ}$t / $p^{ɪ}$-n^{y}u-á:dz ma: -$n^{yə}$-vé-rá:r]
ma:m Mú:lpic pnypu'á:c ma:m nyawí: 'ará:r
ma:m mu:l-pic p-ny-p-u-'a:-c ma:m nyawi: 'ara:r
now Mule-dem dem-then-*-3-stand-c now thing work
and then he stood -- a [full grown] mule. "I'm going to look for

[n^{y}e:-mə-ʃɛt //]
nyayxm yuṣ " 'ac.
nyay-x-m yu-ṣ 'a-c
1=look=for-irr-sr exist-evid 3=say-c
a job," he said.

A second example of 'accelerative timing' is presented below. Perceptually, the rate of speech appears to increase,

and a greater degree of phonetic compression (i.e., phonological simplification) is found:

7. [// hĩ: / nʸá:dʒ-mam / nʸadʒ-ma:m-ᵐpᴵlʸ-mám]
"ʂʂ, nya:c ma:m nya:c (ma:m) mapíly ma:m
ʂʂ nya:-c ma:m nya:-c ma:m mapily ma:m
uh=huh I-s now I-s now now now
"Uh huh, [as for]

[pᵊ-'á:m-pn̥ʸ:-ve-rá:r nʸé: pᵊ-'á:mʃ-]
pa'á:mpiny nyawí: 'arár nyay pa'á:mʂ
pa-'a:-m-piny nyawi: 'ara:r nyay pa-'a:-m-s
dem-l=go-from-dem=o thing work l=look=for dem-l=go-sr-adv
my going along now, I am on my way to look for a job, and

[mᵊk / nʸᴵ-ve-rár mᵊ-ké nʸᴵ-ve-rá:r]
(mak*) (ʌ) nyawí: 'arár makáy nyayá:m rar
(makay*) nyawi: 'ara:r makay nya-ya:-m rar
(where*) thing work where then-locate-sr l=work
wherever there happens to be work, I will work

[kᵊ-yɷ́x-ᴵt / nʸᴵ-ve-rár nʸe:]
kayúx 'ic. nyawí: 'arár nyay
ka-yu-x 'i-c nyawi: 'ara:r nyay
indef-exist-irr l=say-prf thing work l=look=for
at anything. I am my way looking for a job,
whatever it is,

[pᵊ-'a:m gím-nᵋ / nʸ-v-rar nʸe:-]
pa'á:m kyum, nyawí: 'arár nyay
pa-'a:-m k-yu-m nyawi: 'ara:r nyay
dem-l=go-m indef-exist-m thing work l=look=for
I am on my way looking for a job

[pn̥ʸ-'á:m / n̥-pᴵlʸ nʸ-ve-rar mᵊ-ké]
pnya'á:m mapíly, nyawí: 'arár (makay)
p-nya-'a:-m mapily nyawi: 'ara:r makay
dem-then-l=go-sr now thing work where
now, where there is work,

[yᵊm-vɛ́lɬʸ / kɷm- kɷm-]
ya:m rarxly 'ic. nypuny nykwiny
ya:-m rar-x-ly 'i-c nypuny nykwiny
locate-sr l=work-irr-des l=say-prf dem be=all
I want to work. That's all now,

```
[nʸa-ʃáiɬ          y-'ɷ́m   pa-'á:m-bᴵʃ  // ]
ma:m ṣa'íc         ɬyyum   pa'á:mc     yuṣ:"
ma:m ṣa-'i-c       ɬyyum   pa-'a:-m-c  yu-ṣ
now  dem-1=say-c   1=think dem-1=go-m-c 1=exist-evid
I'm thinking of that as I go along."
```

Short semantic topics are more evenly divided by pauses, i.e., the number of syllables between pauses is more regular, and the rate of speech remains relatively constant. An example of this occurs in 8:

```
8. [ // nʸᴵ-xo:l / nʸa:dʒ-nʸᴵ-ve-rar / ]
"... nyxu:l .        nya:c nyawí: 'arár:r
nyxu:l          nya:-c nyawi: 'ara:r
younger=brother I-s    thing  work
"...younger brother. I know where

[ wi-yá:m       wi-yá:-dɪʃ  //        pwi-ya m ]
puyá:m          u:yá:c   yuṣ          puyá:m
pu-ya:-m        u:ya:-c  yu-ṣ         pu-ya:-m
dem-locate-sr   1=know-c 1=exist-evid dem-locate-m
there is a job.

[ ki-nʸá:tˀ  // nʸᴵ-kᴵ-nʸa:-vᵊm-ka / kᵊ-wi: ]
yuk     nya:c nyknya:pkm,  ka:k        nyawí:
yu-k    nya:-c ny-knya:p-k-m k-a:-k    nyawi:
exist-k I-s    2o=1-tell-k-sr impv-go-impv thing
When I tell you where it is, go and

[ kᵊ-ra:r //   hɪ̃:  xᵘé' //   nʸᴵɬ-a-wíw-m-      ]
krark."        "ę,   pxway."   "nysawíwm'
k-rar-k        ę     pxway     ny-sawiw-m
impv-work-impv oh    all=right 2o=1-show=pl-sr
work." "Oh, all right." "When I show it to you,

[ wɪɬ / wi-yá:-vᴵc //                  nʸa:m xᵘe' // ]
mwi:xm       puyá:c      yus."         nya'ám      "pxway."
m-wi:-x-m    pu-ya:-c    yu-s          nya-'a-m    pxway
2-see-irr-sr dem-locate-c exist-evid   when-3=say-sr all=right
you will see it." When he said it, [Mule said,] "All right."
```

There is no immediate explanation for the 'accelerative timing' observed in long semantic topics. One might conjecture that the accelerated rhythmic structure reflects production pressures stemming from the storage limitations of Short Term Memory. Semantic topics represent a linguistic unit on some level of hierarchical organization. If the linguistic generation of all the phrases in a semantic topic is 'linked', then one could conceive of semantic topics being derived as a unit before being sent out of the grammar. Once

the entire semantic topic is expressed as an abstract string, the entire string is sent out to STM for temporal restructuring. In the case of long semantic topics temporary storage problems might be encountered as the string is 'held' between the grammar and STM. (It would have to be 'held' while it is being fed into STM in seven-syllable chunks.) Temporary storage might become problematic if the grammar sends out new semantic topics. I am suggesting that in the 'ideal' situation, the rate at which the grammar produces semantic topics corresponds to the rate at which Short Term Memory sends chunks out to the vocal tract musculature for production. If the grammar produces more (or longer) semantic topics than STM can handle then a temporary 'overload' situation is created where too much material is held in temporary storage between the grammar and STM. 'Accelerative timing' occurs in the 'overload' situation -- STM increases the rate at which abstract strings are temporally structured by crowding longer abstract strings into each chunk. 'Overcrowding' leads to increased phonological simplification due to the invariant mechanical limitations of the vocal tract musculature, i.e., although STM can increase its rate of chunk production, the rate at which vocal tract musculature can move (in articulation) has mechanical limits.

'Accelerated timing' would not be encountered in short semantic topics where presumably the rate of the grammar's production of semantic topics corresponds better to the rate at which 'chunks' are temporally structured in STM. There is a two-fold difference in the number of syllables per chunk between short and long semantic topics: 4-5 syllables between pauses in short topics and 10-11 syllables toward the end of long semantic topics.

The number of syllables per STM 'chunk'is of theoretical interest in the evaluation of speech production models. These theories, which hold that the temporal structure of an utterance is superimposed on articulatory programs stored in short term memory, predict that the average number of syllables per STM 'chunk'is seven. This value reflects the storage capacity of Short Term Memory. In the Cocopa text, several timing units contain more than seven syllables. In these timing units, an interesting phenomenon is observed in one of the middle syllables -- a middle syllable is overlong, that is, it appears to contain an internal pause (cf. pre-pausal lengthening). The internal pause is marked by underlining a long syllable in the phonetic transcription. A syllable containing an internal pause may represent the transition between STM-structured chunks. For example:

9. [/ ɲ̆adʒ-ma:m-^{m}p^{ɪ}l^{ɣ}-mám p^{ə}-'á:m-p$\underline{n^{ɣ}}$:-]
nya:c (ma:m) mapíly ma:m pa'á:mpiny
nya:-c ma:m mapily ma:m pa-'a:-m-piny
I-s now now now dem-l=go-from-dem=o
[as for] my going along now,

[ve-rá:r nʸe: pᵊ-'á:mʃ-mᵊk /]
nyawí: 'ará:r nyay pa'á:mṣ (mak*)
nyawi: 'ara:r nyay pa-'a:-m-ṣ makay
thing work l=look=for dem-l=go-m-adv where
I am on my way to look for a job, and

[nʸᴵ-ve-rár mᵊ-ké nʸᴵ-ve-rá:r]
nyawí: 'ará:r makáy nyayá:m rar
nyawi: 'ara:r makay nya-ya:-m rar
thing work where then-locate-sr l=work
wherever there happens to be work, I will work

[kᵊ-yúx-ᴵt /]
kayúx 'ic.
ka-yu-x 'i-c
indef-exist-irr l=say-c
at anything.

Syllabification

Syllabification is determined during STM storage when an abstract string is temporally structured into articulatory programs. In Cocopa, syllabification in narratives differs from careful pronounciation in that word boundaries are frequently located within a syllable. This change usually reflects a word-final consonant being pronounced as the syllable onset to the next word. The relocated (word-final) consonant may be a stem-final consonant, a syntactic suffix, or an aspectual suffix. The relocation occurs when the following word begins with a vowel, glide, or nasal.

I suggested above that much linguistic information is lost during the temporal structuring of abstract strings in Short Term Memory. Relocation provides evidence for this hypothesis: the location of word boundaries does not control syllabification (whereas the articulation-based maximum efficiency principle does). Processes of phonological simplification (Consonant Cluster Simplification and Nasal Deletion below) and co-articulation (Nasal Merger) also show little regard for linguistic information. This situation should be contrasted with the location of major and minor pauses -- these normally co-occur with word boundaries. The grammar, then, has some control over how much material is entered into an STM chunk, i.e., where the chunk begins and ends, but it has little control once the string has entered STM.

Examples of phonological simplification and co-articulation are presented below under Nasal Merger/Deletion and Consonant Cluster Simplification.

In Nasal Merger, two identical nasals separated by a

word boundary 'coalesce' to form the onset of the following word:

10. pnyawám ma:m 'while I sit here now'
[nʸo-wᵻ-má:m] -m switch reference

11. makám ma:x 'where you will go'
[mᵊ-ká-màx] -m direction away from

12. pa'á:mpiny, nyawí: 'arár 'my going along here, work'
[pᵊ-'á.m-pn̥ʸ:-ve-rá.r] -piny object case marker

13. uyúmxany. nyawí: urárs 'he is very much, he works but'
[kɷ-yɷ́m-ma-nʸᵻ-ve-rar-rɪ́ʃ] -xany 'be very much'

In Nasal Deletion, a word-final nasal is deleted before a word beginning with a non-identical nasal. This process applies with few exceptions to all nasals within an ST™ chunk. Occasionally, nasalization occurs on the vowel preceding the deleted nasal:

14. ma:m "nyawí: arár 'now "work ...'
[ma:-nʸᵊ-vé-rá:r] ma.m 'now'

but 15. ma:m . nyawí: 'arár 'now. "work'
[ma:m / nʸᵻ-vé-rá:r]

16. ma:m numák 'now he leaves'
[maa: nu-mʌ́k]

17. upí:m šwa:m nynamákm ma:m
'from now on when I fire you'
[bínʃ-mã:-yʌ-nə-mʌ́k-kᵊ-ma.m]
-m switch reference

Consonant Cluster Simplification

In tri-consonantal clusters occurring within ST™ chunks, the medial consonant is dropped. This process occurs most frequently when the consonant is word-final, i.e., CC#C. Biconsonantal clusters in word-initial position seem more protected. The pattern of consonant deletion supports Margaret Langdon's description of post-tonic consonants being weaker than those occurring in pre-tonic position. (Langdon, 1975.) It is also predicted by Fowler's (1977) suggestion that speech production is targeted from stressed vowel to stressed vowel and, hence, that pre-tonic consonants are more precisely articulated than post-tonic consonants.

The deleted consonant may be stem-final, a syntactic suffix, or an aspectual suffix. The suffix -ṣ, 'assertion; but', is the primary exception to this rule. It never undergoes deletion. Perhaps -ṣ carries emphatic stress. This would explain its behavior with respect to this rule, and the fact that an epenthetic vowel is frequently inserted before this suffix. Examples of consonant clusters are presented in 18:

18. nyayxm yuṣ " 'ac
    [nʸe:-mə-ʃlɛt//]
    1=look=for-irr-sr exist-evid 3=say-c
    -x intentive irrealis
    -m switch reference

19. ma:mkṣ pxwayxm puyá:m
    [mám ʃᵘéy pʰu-yá:m]
    be=all-df-adv be=good-irr-sr dem-locate-m
    -k dependent future (coordinated with -x, irr)
    -ṣ adversative 'but'
    -m switch reference

20. ṣayúk pa'á:mk makám
    [ʃai-yə́k mã: mᵊ-kʌ́m]
    dem-exist-k dem-1=go-m-k where
    I-will be there while-I-will-be-going-away-from-here where
    -k dependent future, or uncertainty

21. ma:m, kspak ka:mk makay
    [ma:m-ṣ-pʌ́kˀ-kʌ: mᵊ-kéy]
    now impv-leave-impv impv-go-from-impv where
    "Now, go-out! go-away! where ever"
    k-...-k discontinuous imperative

22. ṣayá:m nykumís
    [še-yá:m gə́m-nᴵs]
    dem-locate-sr 3pl=arrive
    "it-was-there they-arrived"

Below, counterexamples with -ṣ are indicated:

23. ma:mkṣ pxwayxm
    [mám ʃᵘey]
    be=all-df-adv be=good-irr-m
    "that-will-be-all-but it-will-be-fine"

24. pa'á:mṣ (makay)
    [pᵊ-'á:mʃ-mᵊk]
    dem-1=go-m-adv (where)
    "I-go-along-here-but (where)..."

25. nyawí: urárs ma:m
[nʸᴵ-ve-rar-rí∫ -ma:m]
thing 3-work-adv now
"he-works-but now"

Tri-consonantal clusters across pause boundaries rarely show deletion. The pause boundary, rather, is the most common environment for vowel epenthesis:

26. pnyuyíwc nyawí:
[miⁿʸ -yé::-wit / nʸᴵ-ve]
dem-then-3-arrive=pl-c thing

27. Mú:lpic pnypu'á:c
[mɔ́:rᴵ-vᴵt / pᴵ-nʸu-'á:dʒ]
mule-dem=s dem-then-3-stand-c

28. nya:c nyknya:pkm
[nʸa:tˀ // nʸᴵ-kᴵnʸa:-vəm]
I-s 2o=1-tell-k-sr

29. rark pa:k pa:xm puyá:m
[rá:rk / pá:k / pá:x-m pu-yá:m]
1=work-df 1=go=along-df 1=go=along-irr-sr dem-happen-m

One final difference in the phonological structure of Cocopa free narratives versus careful speech should be noted. There is a distinction, in free speech, between 'real' glottal stops -- those which always appear in the surface phonetic form, and 'quasi' glottal stops -- those which rarely (if at all) occur in spontaneous narratives. The presence of a glottal stop in a word was determined by Crawford's phonemic transcription and by personal elicitation with an informant. The glottal stop in p'a. , 'to stand', and 'a., 'to go', always occur. They are 'real' glottal stops:

30. pnypu'á:c 'then he stood here'
[pᴵ-nʸ u-á:dʒ]

31. pa'á:k 'I will go along here'
[pᵊ-'a:k]

32. pnya'á:m 'then I go along here'
[pn̥ʸ-'á:m]

33. pa'á:mpiny 'my going along here'
[pᵊ-'á:m-pn̥ʸ:]

The glottal stop in 'a, 'he says', is 'quasi':

34. nya'ác [nʸa:dʒ] 'then he said'

35. pa:'ás [vas] 'they call him'

The glottal stop in 'a., 'to go', occasionally appears as an amplitude drop.

Conclusions

I. The Cocopa narrative is 'punctuated' at regular intervals by pauses. The interval, i.e., the time elapsed between pauses, appears to correspond to the storage capacity of STM. (This is apparent on a physical recording of speech, e.g., a spectrogram, where the speech utterance is broken by pauses at fairly regular intervals.)

The length of pauses may be linguistically controlled, viz. to reflect the nature of semantic juncture. Major pauses reflect major semantic junctures, minor pauses occur at phrase boundaries, syllable-internal pauses occur at 'chunk' boundaries.

The location of major and minor pauses appears to be under linguistic control to the extent that the grammar is able to control how much of an abstract string enters a given STM 'chunk'. The linguistic control of pause location 'breaks down' in accelerative timing, when the grammar is generating strings faster than Short Term Memory is able to temporally structure them. The location of (syllable-internal) pauses in long semantic topics suggests that the grammar 'sacrifices' some control of pause location in the overload situation.

II. The phonetic changes in the abstract string entered into an STM 'chunk' suggest that the grammar has little control over the temporal structuring of an utterance. The syllabification created during the formation of articulatory programs may ignore word boundaries. Co-articulation phenomena may delete morphological, syntactic and semantic information. These findings suggest that speech rhythm, beyond the specification of segmental durations as long or short (relative to one another), is determined outside the grammar.

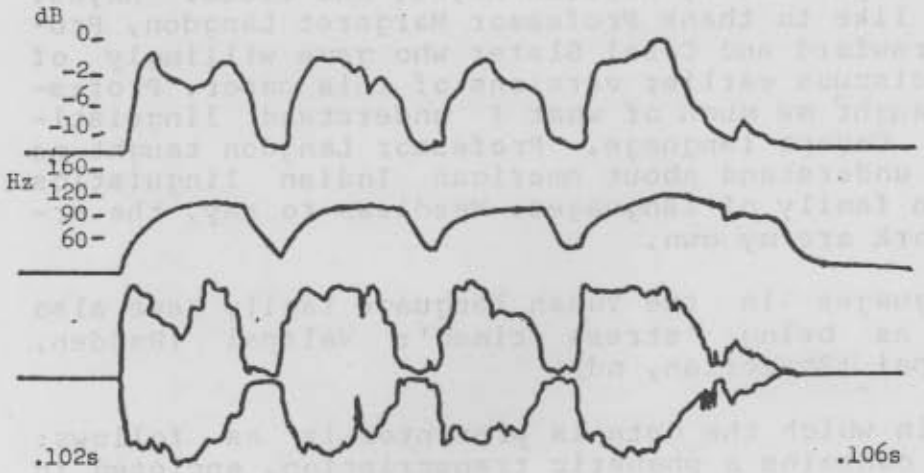
Appendix

The following two tracings are included in order to provide the reader with some sense of the physical data. Three 'signals' occur in each tracing: the top line is an amplitude contour, showing changes in loudness. The second line is a fundamental frequency contour, 'Fo', which registers changes in pitch. The bottom line is the speech wave, a rapidly changing sine wave. The changes in the sine wave are enclosed in an envelope

The physical recording was derived from the tape by sending the output of the tape to three separate 'signal analyzers'. The pitch 'signal analyzer' consists of a Transpitch Meter which extracts the fundamental frequency from the speech wave. The output of the Transpitch Meter was sent into a pitch extractor which converts the Fo into a continuous waveform. (The pitch extractor was developed by Jeff Hardy and Bob Barker of the UCSD Phonetics Laboratory.) The amplitude 'signal analyzer' extracts the amplitude of the speech waveform and converts it into a continuous waveform. This device was developed by Bob Barker and Professor Timothy Smith.) The speech waveform, in conjunction with the fundamental frequency and amplitude waveforms, is sent into an oscillomink which produces a physical copy of the changing values of each of these signals across time. (The scale is 50mm/s.) The amplitude contour is a good indicator of the location of syllable boundaries. The waveform usually drops at these boundaries. In slow speech, the fundamental frequency curve shows word boundaries by a contour drop. During accelerative timing only pre-pausal phrase boundaries are shown.

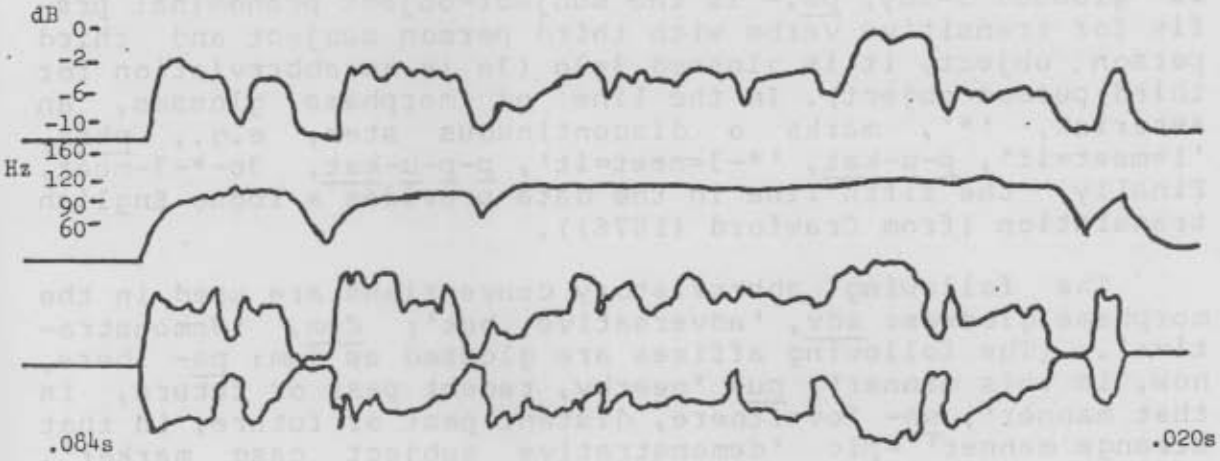
A short semantic topic and a long semantic topic are presented. The former shows fairly regular stress timing. The latter indicates accelerative, with less prominent amplitude, i.e., stress, contours.

Figure 1. A Short Semantic Topic



// mo nʸi xo:l /mʌ ka: ma: x myu: / ʌ //
"mu: nyxu:l, makam ma:x myu " 'a
"Well, younger brother, where are you going," he says

Figure 2. A Long Semantic Topic with Accelerative Timing



nʸa:dʒ mʌm mʲpɪlʸmʌm pʲ' a: m nʸɾ ve: : ra:r nʸ eːʸ pʲ'a:m ʂ mʌk

"/ nʸa:c ma:m mapilʸ ma:m pa'ą:mpinʸ nʸawi: 'ara:r nʸay pa'a:ms, "

" As for my going along here now, I am on my way to look for a job, "

Scale: 50 mm/s

Footnotes

1. I wish to thank the Cocopas who shared their language with me, especially Hope Miller, Lillian Hayes, and Victor Hayes. I would also like to thank Professor Margaret Langdon, Professor James Crawford and Carol Slater who gave willingly of their time to discuss earlier versions of this paper. Professor Crawford taught me much of what I understand linguistically of the Cocopa language. Professor Langdon taught me most of what I understand about American Indian linguistics and the Yuman family of languages. Needless to say, the errors of this work are my own.

2. Other languages in the Yuman language family have also been described as being 'stress timed': Walapai (Redden, 1966) and Yavapai (Shaterian, nd).

3. The format in which the data is presented is as follows: the first line contains a phonetic transcription, enclosed in square brackets, '[ ]'. Hyphens in the phonetic transcription mark syllable boundaries. The second line is a phonemic transcription drawn from Crawford's published version of this narrative (1976). The third line indicates morphological structure, hyphens separate individual morphemes. The fourth line glosses each morpheme isolated in the third line. Again, hyphens separate morphemes. An equal sign, '=', separates meaning subparts of a single morpheme. For example, 'i, 'I say' is glossed 1=say. The suppletive third person form, 'a, is glossed 3=say; pa.- is the subject-object pronominal prefix for transitive verbs with third person subject and third person object, it is glossed 3=3o (3o is an abbreviation for third person object). In the line of morpheme glosses, an asterisk, '*', marks a discontinuous stem, e.g., pkat, '1=meet=it', p-u-kat, '*-3=meet=it', p-p-u-kat, 3o-*-3-meet. Finally, the fifth line in the data provides a loose English translation (from Crawford (1976)).

The following abbreviatory conventions are used in the morpheme glosses: adv, 'adversative, but'; dem, 'demonstrative'. (The following affixes are glossed as dem: pa- 'here, now, in this manner', pu- 'nearby, recent past or future, in that manner', sa- 'overthere, distant past or future, in that strange manner' -pic 'demonstrative subject case marker', -piny 'demonstrative object case marker'. evid, 'evidential, 'this is true''; irr, 'intentive irrealis', o, 'object (direct or indirect)'; pl, 'plural'; prf, 'perfective'; s, 'subject'; sr 'switch reference, indicating that the following verb has a different subject from the current verb'; ss, 'same subject, indicating that the following verb has the same subject as the current verb'; ":", 'length (marked on vowels and sonorants)'; 1, 'first person pronominal prefix'; 2, 'second person pronominal prefix'; 3, 'third person pronominal prefix'.

4. The asterisk on this form, and its glosses on succeeding

lines, indicates that this was a speech error. My consultant suspected that the speaker intended to say makay, 'where', but changed his mind.

ON THE SEMANTICALLY INTERLOCKING NATURE OF THE KASHAYA VERB PREFIXES: THE CASE OF SI- 'WATER, DRINK, TONGUE'

Robert L. Oswalt

California Indian Language Center

The Kashaya language has a set of twenty actively used verbal prefixes of the type often called instrumental. The semantic range certainly includes inanimate instruments, and in many contexts the prefix would be translated into English by instrumental phrases -- 'with a nonlong object (rock)', 'with an instrument with a handle (paintbrush)', etc. Many of the prefixes also refer to body parts and these too can often be translated by an instrumental phrase -- 'with the finger', 'with the foot', etc. Some prefixes refer to natural forces and, although these may sometimes be rendered by an instrumental phrase -- 'by heat', 'by gravity', etc. -- there is a syntactic difference in Kashaya, for there is usually no expressible agent to control such an "instrument". With descriptive verb roots, the prefix may indicate the object being described. With such a verb, pʰi- might be 'to be (big-)eyed'; with an active verb root, the translation might be 'to (examine) with the eyes'. The types of meaning range even further, and the necessity of this can be understood from the situation that two-thirds of the verb roots in Kashaya are of a type that takes these prefixes and that then the root must occur with one, and only one, of the set of mutually exclusive prefixes. Many of the prefixing verb roots are of general meanings, like -hnat- 'try, test, investigate'; the method of 'trying' is indicated by the prefix, and since almost every conceivable action must be designated by one or another of only twenty prefixes, each prefix has a quite wide semantic domain.

In Table 1 (at the end of this paper), there is given a list of the twenty productive verbal prefixes together with sets of glosses that indicate in simplified fashion the semantic range of each. The table is presented here simply to make the information more widely available; the discussion below mentions only a few and will come to focus on the one prefix si-.

Now, if one were constructing an artificial language and decided to divide all possible instruments or forces into twenty boxes, a portion of the essay might look like Figure 1.

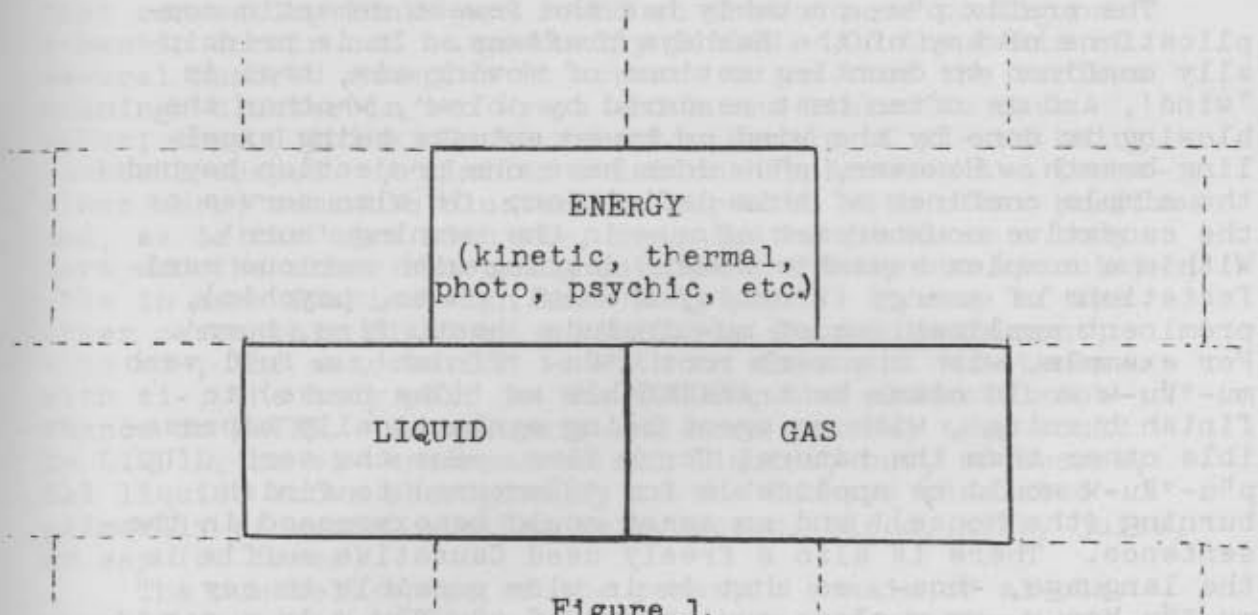


Figure 1.

In such an attempt, there would be, of course, some complexities and uncertainties, but the result would be simple and sharply defined relative to the realities of a natural language. Now, it happens Kashaya has prefixes that in general fit the labeled boxes of Figure 1, but not in such an orderly way; there are intrusions of one prefix into the neatly delimited box of another such that a closer approximation of the reality in Kashaya would be that in Figure 2.

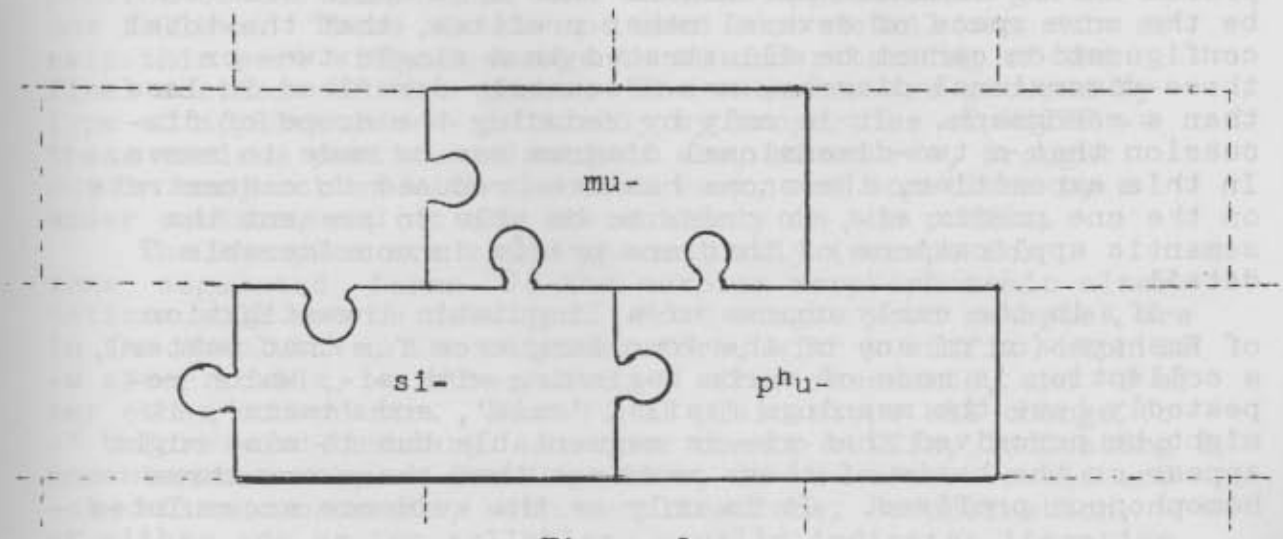


Figure 2.

The prefix p^hu- probably has the fewest semantic complications of any of the Kashaya prefixes. It is principally confined to denoting actions of moving air, that is 'wind', and is often best rendered by 'blow', whether the blowing is done by the wind or by an animate being expelling breath. However, p^hu- does have one projection beyond the simple confines of this definition; it also serves as the causative counterpart of mu- in the meaning 'burn'. Within a complex semantic domain dealing with various manifestations of energy (kinetic, thermal, photo, psychic), prominent applications of mu- include 'heat, fire, burn'. For example, with the verb root -ʔǩu- 'finish', a full verb mu-ʔǩu-w would often be translatable as '(The house) to finish burning', with no agent being syntactically expressible other than the natural force fire. But the verb p^hu-ʔǩu-w would be applicable for '(Someone) to finish burning (the house)' and an agent could be expressed in the sentence. There is also a freely used Causative suffix in the language, -hqa-, so that it is also possible to say mu-ʔǩu-hqa-w as a close equivalent of p^hu-ʔǩu-w in a context referring to burning. However, in other contexts the meanings do not overlap, so that p^huʔǩuw also applies to 'to finish blowing' (but not muʔǩuhqaw) and muʔǩuhqaw serves for 'to cause a nonlong object to finish moving' (but not p^huʔǩuw).

The semantic domain of p^hu-, in turn, suffers encroachment from the use of si- when the movement of the air is very light and gentle. This I surmise to be a metaphoric extension of one of the common applications of si- 'liquid, etc.', as will be described later. The box for mu- is also penetrated by the use of si- in certain verbs denoting a flash or momentaneous light. In fact, a diagram like that in Figure 2 is altogether too simple for the actual situation in Kashaya. That situation is so complex, with each prefix having semantic extensions into what would seem to be the core space of several other prefixes, that the total configuration cannot be illustrated in a single two- or three-dimensional diagram, nor adequately described in less than a monograph. It is only by reducing the scope of discussion that a two-dimensional diagram can be made to serve. In this exposition, the scope has been reduced to concentrate on the one prefix si-, in order to be able to present the semantic applications of that one prefix in considerable detail.

If, in the early course of a linguistic investigation of Kashaya (or of any of the Pomo languages for that matter), a collection is made of verbs beginning with si-, which repeatedly have the meanings 'sail', 'rain', and 'taste', it might be perceived that si- is segmentable but it also might appear on the basis of these meanings that there are three homophonous prefixes. It is only as the evidence accumulates

that connecting links are found so that a more contiguous semantic domain can be gradually filled. On the basis of several hundred examples it appears to me that the various meanings cluster in two areas which are linked to each other; thus I think of the semantic domain of si- as being dumbbell-shaped. A similar relationship between two (sometimes more) semantic clusters is repeated with other prefixes and, as is the case with si-, one cluster involves a body part and the other something outside the body but associatable in some fashion with that body part. In some of the other cases this might be a similarly shaped instrument; with si-, the association is with an elemental substance. With si-, the body part is the TONGUE, the elemental substance is WATER. An accurate and more general term would be LIQUID, as si- encompasses all liquids; but, of course, all liquids known aboriginally to the Kashaya consisted primarily of water, whether rain, ocean, blood, milk, juice, or sap (of trees).

The dumbbell shape of the semantic domain of si- is roughly depicted in Figure 3, with many indentations and protuberances. Not every action that involves WATER or the TONGUE can be denoted with si-; these cases are represented as indentations or incursions of other prefixes into the smooth outlines of the core area of si-, as simply defined. And si-, for its part, extends into what would seem to be the core areas of several other prefixes. An attempt was made in Figure 3 to represent semantic extensions as narrow, or narrow-stemmed when they were particularized or it was relatively difficult for me to see a connection with a core meaning (for example, si- 'flash') and as broader, the clearer or more elaborated the extension (for example, 'unsteady: wobble, dizzy'). All of the usages inscribed in Figure 3 are multiply attested.

A rather full documentation (but still only a minor portion of the corpus) of the various applications of si- now follows. Those who do not need such detail can skim or skip this part without damage to an understanding of the final sections of the paper. The examples are grouped by type of application -- initially by properties of WATER -- these various particularizations are, of course, brought out in conjunction with the verb root, and sometimes by a wider context, and do not lie entirely in the prefix.

The examples are cited phonemically (except for some segmented forms); the complex morphophonemic alternations will not be detailed. Most single word examples are in the Absolutive, the citation form, with a suffix which is -w after vowels, -u after -d-, -ʔ after resonants, and -Ø after other consonants. Stem-final plain stops all change to -ʔ before word-boundary. Another common suffix, indicating a momentaneous act, or its inception, is -c- after vowels and -ci- after consonants, with complications. Reduplication, of either one or two syllables, usually indicates iteration. Complexly alternating vowel length is represented by °.

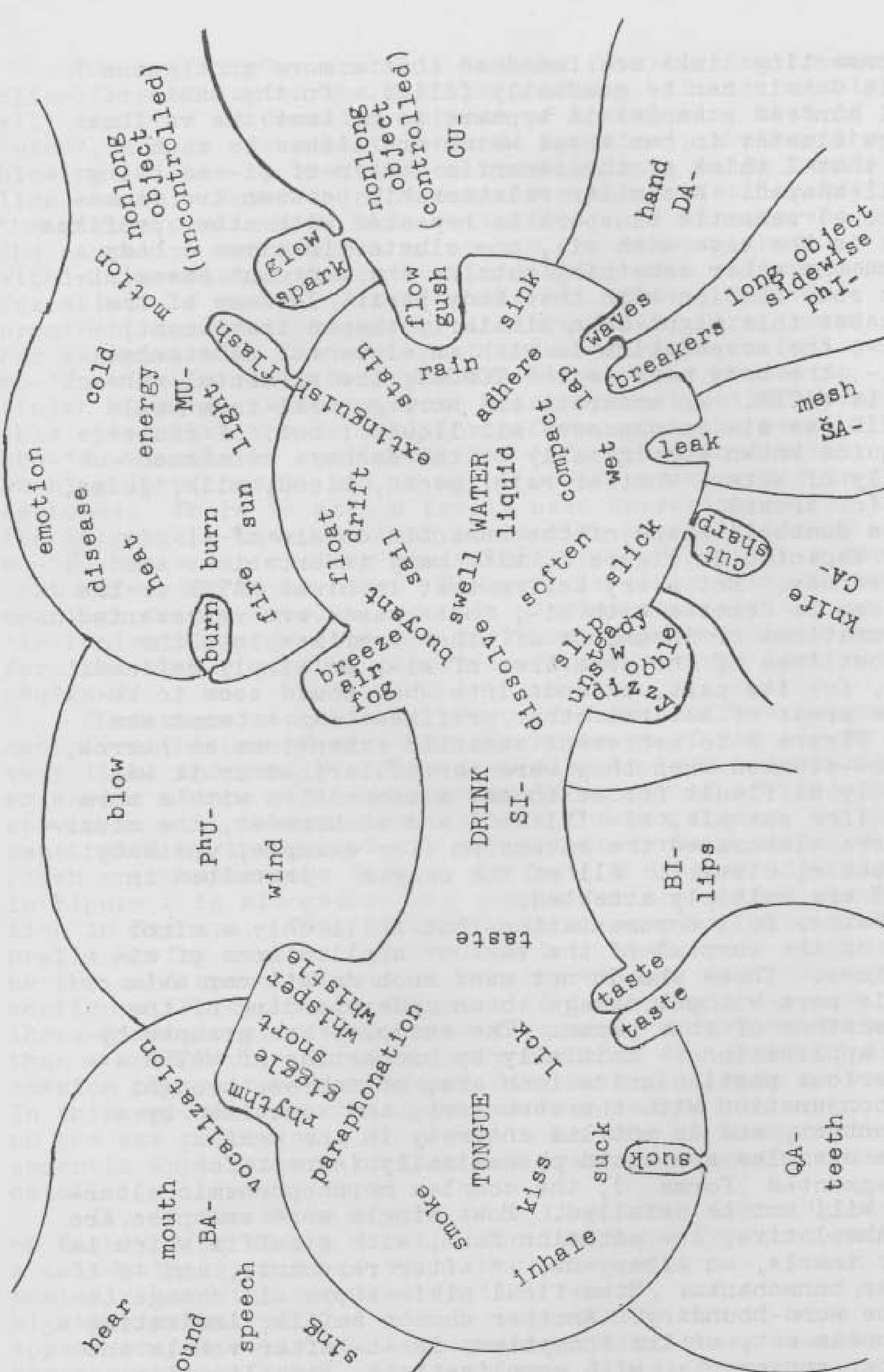

emotion
disease
heat
cold
energy
MU-
motion
nonlong object (uncontrolled)
burn
burn
fire
sun
light
extinguish
flash
stain
glow
spark
flow
gush
nonlong object (controlled)
CU-
hand
DA-
float
drift
buoyant
sail
swell
WATER
liquid
rain
adhere
sink
dissolve
soften
compact
wet
gel
waves
breakers
long object sidewise
PhI-
leak
mesh
SA-
slick
slip
unsteady
wobbly
dizzy
cut
sharp
knife
CA-
breeze
air
fog
blow
PhU-
wind
DRINK
SI-
BI-
lips
taste
taste
taste
lick
whisper
whistle
snort
giggle
rhythm
paraphonation
vocalization
TONGUE
kiss
suck
suck
QA-
teeth
smoke
inhale
hear
sound
mouth
speech
BA-
sing

Figure 3

Figure 3

WATER

1. The physical force of the movement of water has an effect. This includes falling as rain, swirling, being agitated, and minor lapping at the shores of a pond or stream. Certain types of water movement are denoted by other prefixes and are indicated in Figure 3 as encroachments into the domain of water; namely, cu- (usually for NONLONG OBJECTS) for flowing water (either of a river or from a hose), da- (HAND) for waves (larger than minor lapping), p^hi- (LONG OBJECT ACTING SIDEWAYS) for breakers, ša- (MESH) for leaking or draining.

siq^{h}aw '(rainstorm) to knock off (nuts) from (a tree)'. -q^{h}a°- 'detach many'.

si?ṭelciw '(grass) to be parted by the force of falling rain'. -?ṭel- 'part'.

šahku si-hlóḵ - ci - wi - ye· to q^{h}a - woṭo =wi
leg flop lp-obj. Evid. me water-roiled with
'My legs collapsed in the roiled water.'

si?ćolhciw '(riverbank) undercut by lapping water to collapse leaving a hole or cave'. -?ćolh- 'make a hole'.

2. Wetness; the property of water that causes it to penetrate and diffuse through certain substances.

sihcow 'to get wet'. The most common word for 'wet'. -hco- occurs uniquely with this prefix si-.

siśú·śu? 'to get soaking wet'. Again the root occurs uniquely with this one prefix.

si?duwa·law 'water to soak down through (a substance)'. -a·la- 'down'; -?du- 'penetrate a barrier'. Cf. mu?duwa·law 'heat to diffuse down through (the roof)'.

?ihc^{h}e ?nati si - ht^{h}ółh-ma - ?k^{h}e =t^{h}in mu-l buṭaqa ḵaṭa
rain even penetrate Future not that-obj. bear skin
'Even rain will not penetrate that bear skin.'

3. Water or solutions may stain or discolor.

si?ṭew 'water to stain or mark'. -?ṭe- 'make a mark'.

sihk^{h}ahk^{h}a? 'to be stained here and there by dripping water'. -hk^{h}a- when reduplicated, plus -c-, means 'stain'.

sićow 'to be transformed by water, turned a different (color)'. -ćo°- 'transform'.

4. Water softens and weakens, causing some substances to distort, disintegrate, disperse, or dissolve.

sihwaćciw '(cardboard box) to flatten when wet'. -hwać- 'flatten'.

siht^{h}aw '(paper bag) to tear open when wet'. -ht^{h}a- 'open'.

he?e do?lo mito si - kél? - ye· ?ahqʰa =wi
hair curly your straighten Evid. water in
'Your curly hair is straightening in the water.'

sihṭʰil? '(sweater) to stretch when wet'. -hṭʰil- 'stretch'.

silo·cihqaw 'to soften (a scab), to ease (a pain), by soaking in water'. -lo·ci- 'soften', -hqa- Causative.

sihko? '(soap) to dissolve in water'. -hkot- 'become nothing'.

sihso? 'to dissolve in water, to vanish into thin air (not just into water)'. The only other occurrence of -hsoṭ- is in mohso? 'to melt'.

siśaw '(acorn flour) to be leached'. Unique occurrence of -śa-.

siṭem? 'leaching to be proceding too slowly'. -ṭem- 'process go too slow'.

5. Being wet causes objects to adhere, cling, stick, or become compact.

siṭa·ši? 'to wet the hair to hold it off the forehead'. -ṭa°š- 'to bare the forehead', -i°c- Reflexive.

ḱaṭa mito si - ?ḱuc-a· - qʰ.
clothes you-obj. stick-against Evid.
'Your clothes are clinging to you wet.'

siwol? '(pine pitch) to be thin and sticky'. -wo°l- usually means 'be soft, yielding'.

sipa·ṭay? 'wet (cloth) to adhere to'. -pa°ṭ- 'cover', -a°y- 'against'. The word is extended in application to fabrics which adhere, whether wet or not. A further derivative is sipáhṭay?li 'adhesive tape', literally 'adherers'.

sihpanhciw '(ground) to become compacted from being wet'. -hpanh- 'pack down'.

6. Being wet causes objects to swell, sometimes entailing other changes.

sipoš '(drowned animal's belly) to bloat in water'. -po°š- 'swell, blister'.

si?ćacciw 'from being wet (board) to swell and fit tight'. -?ćac- 'tight'.

si?ćaba? '(seed) when soaked to swell and crack apart'. -?ćaba-c- 'crack apart'.

siḱaṭʰi? '(hull of nut) to crack open'. -ḱaṭʰi-c- 'crack open'. In application, this word is used of some hulls cracking open in the normal ripening process, not just when wet.

7. Water has buoyancy; some things float in it.

si?dim? 'one to float in place'. -?di- 'act with one object', -m- Essive 'in one place'.

side·du 'one (boat) to sail along'. -de-, allomorph of -?di- above, -·d- 'move along'.

si?bom? 'group (of ducks) to float together in one place'. -?bo- 'group to do'. In a metaphorical extension, si?bom? also applies to a group of dancers performing as if floating in place.

sibo·bi? '(school of fish) to rise to the surface together', 'dance ensemble leap up together'. -bo-, allomorph of -?bo- above, -°bi°c- 'move up'.

8. Water yields; some things sink in it.

sit̓ulci? 'to duck oneself into water'. -t̓ul- 'disappear into'. The final -? comes from -°c̓- Reflexive.

sip̓il? 'to be fine-textured'. Of silt or acorn flour selected by letting the coarser particles settle out first and taking the finer particles that settle out of suspension last. -p̓i°l- 'fine, slick'.

sinam? 'to drown'. -na°m- 'cover over'. Although the meaning 'drown' does not necessarily follow from the sum of the parts 'be covered over with water', this particularized meaning 'drown' is common in cognate constructions in other Pomo languages.

sihp^{h}uk̓ut^{h}ç̓i? 'to sink slowly into water (or mud)'. -hp^{h}uk̓ut- 'enter something yielding'.

9. Wet surfaces are slippery.

sihq^{h}asihq^{h}aw 'to slip back and forth'. -hq^{h}a- 'move along a surface'.

sihq^{h}ay?maw 'to slide across a slick surface'. -hq^{h}ay?- 'move along a surface', -ma- 'across'.

10. One broad bulge from the WATER lobe of si- is labeled 'unsteady' (including 'wobble' and 'dizzy'). This area may have a partial metaphorical origin from the preceding concern with the slipperiness of wet surfaces. Because being drunk and dizziness are connected, there is that added link with si-, but the present 'unsteady' application has no necessary association with WATER or DRINK. This application cannot be said to be an encroachment on the semantic space of another prefix, because no other is clearly concerned with 'unsteadiness'. I could imagine that mu-, because it occurs in verbs for emotional states, might have taken on the 'dizzy' application, but it has not.

si?tim? 'to stand unsteadily (like a baby)'. Most occurrences of -?ti- with other prefixes mean 'curl, roll, gather up'; -m- Essive 'in one place'.

si?ti?ti? 'to stagger'. Same verb root as above.

?aná· ?ahca ṭʰu?ul in, sihkóhkow. -hko- 'move loosely at point of attachment'.
so house old being
'The house being so old, it is wobbling.'

sikol? 'to feel dizzy (from vertigo)'. -ko°l- 'spin, turn'.

siku? 'to feel dizzy'. Other occurrences of the root -ku°ṭ- with an associatable meaning are baku? 'to have a ringing in the ears' and miku? 'to hum'.

siku·ṭi? is formed with -i°c- Reflexive added to the preceding verb; literally 'to dizzy oneself', it is the most common word for 'to get drunk'.

11. A second important bulge from the WATER lobe concerns the gaseous state and is labeled in Figure 3 'fog, air, breeze'. I believe it quite probable that this semantic area developed because air has several properties similar to those of water; those given above as 7 buoyant and 8 yielding. Additionally, the 'fog' meaning is appropriate because fog is damp. When air is moving lightly, si- is the preferred prefix with a limited number of roots, while pʰu- is the common prefix for ordinary wind.

sinaw 'fog'. -na°- 'cover, block'. This construction for 'fog' appears in several Pomo languages.

qali· sitúlci?-ye· ?ihtʰe.
up Evid. feather
'The feather disappeared up (into the fog, air, or sky).'
Note that situlci? was also given in 8 for 'duck oneself into water'.

sitʰew '(parachute) to spread open in the air'. -tʰe- 'spread'. Note that this is the appropriate form when the parachute opens because it is falling or moving through the air. If the wind blows it open, the verb is putʰew. sitʰew also applies to opening in water.

sitʰeca·law '(snow) to settle down, (flock of birds with spread wings) to settle down'. -a°la- 'move down'.

sikil? 'to be fresh air or a light breeze'. -ki°l- with most prefixes means 'swing, wave around'.

sikilqaw 'to fan the air lightly'. -qa- Causative.

sihkihkiw 'to be repeatedly or continually breezy'. -hki- reduplicated usually means 'swing' or 'tap', repeatedly.

12. A third bulge is labeled 'cut, sharp' and this I consider an encroachment into the domain of ca-, which is much the most common prefix for cutting and for acts with a knife or blade. The semantic specialization is that with si- the cut is quick, clean, and easy, and usually made with a very sharp instrument like a razor or scissors; with ca- it can be a hack job. This particularization of meaning is more difficult to relate to the semantic core of si-, although I could imagine it having arisen by likening the ease of the cut to the ease with which one can slice water. In any case, the meaning development is probably very old, predating the advent of razors and scissors, because it occurs in most Pomo languages, those both closely and distantly related. The prefix qa- 'with hard opposed forces' is also employed for cutting with scissors (but not a razor) because they have two blades in opposition to each other.

si?baw 'to slice open (meat) with something very sharp'; it is used especially for 'to cut out a pattern from cloth with scissors'. -?ba- 'break apart, crack open'.

siq^{h}aw 'several to be cut off quick and clean with something really sharp'. -q^{h}a°- 'detach many'. Note this verb also appeared under 1. with a different particularization.

si - lác^{h} - mela· ?a k^{h}e taq^{h}ma.
misdo Evid. I my dress
'I miscut (the material for) my dress.

si?ċo?ċo? 'to cut around the edges (of paper or cloth) with scissors'. -?ċo- 'detach piece from the edge'.

13. A few verbs with si- are concerned with fire or light going out or being extinguished; in some instances the quenching agent may be water, but this is not necessarily so in most occurrences.

si?baw 'to cool off, light or fire to go out'. -?ba- 'break apart, crack open'. Cf si?baw under 12. above.

sik̓alciw 'fire to burn down and out'. With most other prefixes, -k̓al- means 'open slightly'.

sik̓alcihqaw 'to let a fire die down, to turn a light off'. -hqa- Causative.

sihsim? '(water) to put a fire out'. -hsim- 'extinguish'.

14. A few verbs with si- are concerned with flashing light and this is marked in Figure 3 as an intrusion into the space of mu-. It is difficult to see how such a use could develop from the core meanings of si- except perhaps through the intermediary of the 'extinguish' meaning illustrated in 13 above -- in that case, the Kashaya emphasis is perhaps on the light going <u>out</u> and not that it goes <u>on</u> momentarily. There are very few examples and it is interesting to note that these verbs fail a test for the native speaker's feeling

for what verbs are associatable with others beginning si-. (The test is described below, following this section of examples.)

silaḵa·ti? '(searchlight or lighthouse) to be flashing'. Cf. mulaḵa·ti? 'to be sparking from rocks striking together'. The final syllable contains -i°c- Reflexive.

sihlaḵa·talaw was translated "see lights down in the valley go out". This derivative contains the same verb root as in the preceding example, but with the suffix -a°la- 'down' instead of the Reflexive. That the translation can shift from emphasis on the light(s) going on momentarily to going off, provides evidence that the applications in 13 and 14 are related.

siṭama? '(lightning) to flash'. -ṭam- occurs uniquely with si-.

siṭamsiṭama? 'to flash and flash'.

15. Besides the preceding multiply attested applications of si-, there are several unique uses belonging to the WATER lobe.

?aná· ?ahqʰa ṭubú·ta? - li , ?ilamo balay si-hsoḵotʰ-wiy
so water dive - switch, nose blood spurt Evid.
'When [I] dived so much, [my] nose spurted blood.'
The agent appears to be the pressure of the water.

ši?ba si?ṭé?ṭe? 'body is paralyzed'. -?ṭe- has a variety body of meanings; in a few constructions, when reduplicated, it means 'misshapen'. The connection with WATER comes about because paralysis is one of the punishments for breaking the taboo against approaching water while menstruating. si?ṭe?ṭe? is also descriptive of a head flattened in back, but this need not have come about through breaking a water taboo or through any other agency of water.

sico·li? 'to get smelly when wet (of dogs and some foods)'. -co°l- occurs uniquely with this prefix.

siqam? '(water) to become clear'. -qam- occurs uniquely with si-.

DRINK

16. DRINK provides a link between the two major lobes of the semantic space of si-: DRINK is an act performed on WATER (and other liquids), and DRINK is an act performed by the TONGUE (in conjunction, of course, with other parts of the mouth and throat). There are an amazing number of verb constructs in Kashaya for which, in certain contexts, DRINK provides part of the translation. This comes about partly because there are many verb roots with an "aspectual" type of meaning; the more "concrete" meaning is supplied by the prefix. A sampling follows.

sik̓umi? 'to drink as much as one can'. -k̓um-i°c̓- 'do to one's limit', -i°c̓- Reflexive.

sihpʰuṭay? 'to be unable to finish drinking'. -hpʰuṭ-a°y- 'be too much to finish', -a°y- 'against'.

si?p̓o?p̓o? 'to drink to the last drop'. -?p̓o- , when reduplicated, means 'do to the last bit'.

to· =ṭ̓o ?aná· wi·no si - hqa -w in , šulam-?kʰe =tʰin.
me Contrast so wine inured Abs. being sick Future not.
'As for me, being inured to drinking wine, [I] won't get sick.

si - ?ṭ̓el -? si -?ṭ̓a - yicʰ - wiye· to.
insufficient feel Incep. Evid. me
There is not enough to drink; I feel like drinking more.

si?ṭ̓aw?duyi? 'to drink oneself to death'. -?ṭ̓aw?d- 'do injuriously', -uyi°c̓- Reflexive.

sic̓i? 'to drink several kinds of drinks'. -c̓i°ṭ- 'mix, do one thing with another'.

TONGUE

17. The TONGUE is a sense organ, which can taste. In this use there remains a considerable element of the WATER meaning; si- is not applicable to all tasting done by the tongue but only to tasting of liquids and licked foods. The prefix qa- TEETH is employed for tasting chewed foods, and the prefix bi- LIPS for tasting foods eaten with a spoon. This division in usage does not mean that the Kashaya believe, for example, that the teeth do the actual sensing.

si?ya? 'to recognize a drink by its flavor'. -?ya°q- 'detect and recognize'.

sišudu 'a drink to taste strange'. -šud- 'be strange, unfamiliar, unrecognizable'.

sihqʰahqʰaw 'to get a faint taste of a drink'. -hqʰa-, when reduplicated, means 'barely detect'.

sihsew 'to dislike what is drunk'. -hse- 'dislike, be irritated by'.

si?né·ci? 'to get used to the taste of a drink'. -?né·c-i°ć- 'get used to', -i°ć- Reflexive.

ţí?bahqa· ţʰo?o si - htay?- ba , ḍo?di si - ?t̓a - yi·- y
blackberry sauce touch co-ref. good seem Incep. Evid.
'When [I] got a touch of the blackberry sauce, it tasted good.

18. The TONGUE can perform actively as an instrument. This application is far removed from the WATER node, as no liquid need be involved in the action. The most common translation is 'lick', but that is not always possible.

sibal? 'to be licking off (one's plate)'. -ba°l- 'to be wiping'.

sibol? 'to be licking out a hollow (in an icecream cone)'. -bo°l- 'to be hollowing out'.

sis̓uli? '(cat) to be licking itself to make (its fur) smooth and shiny'. -s̓ul- 'make smooth and shiny, -i°ć- Reflexive.

sibeta·du 'to be testing with the tongue (whether there is a fishbone in the mouth)'. -bet- 'try to detect something unseen that is not known for sure to be present', -a°d- Durative.

sihsilhma? 'to get a sliver in the tongue'. -hsilh- 'get a sliver in', -ma- Essive 'in one place', -°ć- Reflexive.

si?dim? 'to hold (a lozenge) on the tongue'. -?di- 'to act with or on one object', -m- Essive 'in one place'. Note that this is the same verb given under 7. Various Directional suffixes can be added to form verbs meaning 'to carry on the tongue' or 'to push with the tongue' (in the direction specified). Such uses are normally less common than the 'sail' meaning under 7.

19. Another semantic area of si- is concerned with 'suction', and this application has a rather rich development because in Kashaya culture sucking out disease is a common method of treatment by Indian doctors. Curiously, in a few of the most common doctoring words, a parallel form with qa- TEETH is preferred to the one with si- (second example below); although, to my knowledge, no difference in method of sucking is intended. Although the meaning 'suck' undoubtedly arose because it is an activity done with the tongue, the application is extended to include kissing, inhaling, smoking, and suction created by various devices.

siht^{h}in$^{?}$ 'to straighten with the tongue, to suck or lick to make (a wound) well'. -ht^{h}in- 'straighten, correct a defect'.

sic^{h}i$^{?}$ 'to suck out (a pain, disease, or other object)'. -c^{h}i$^{\circ}$t- 'extract, remove one thing from in another'. qac^{h}i$^{?}$ is the more usual doctoring word.

sisal$^{?}$ 'to suck juice from (an orange). -sa$^{\circ}$l- 'express liquid from a solid'.

si$^{?}$tut^{h}u$^{?}$ 'to suck (a straw) so that it collapses in'. -$^{?}$tut^{h}u$^{\circ}$c- 'constrict'.

qapa šálal - am - qa· mito. ciba·=t^{h}in si-hc^{h}iwá·du$^{?}$-ye· ?
cheek bruise become Evid. your who not hurt Evid. ?
'Your cheek has turned black and blue. Did someone kiss you too hard?'

siq^{h}oli$^{?}$ 'to suck up (soup into the mouth), to suck snot up (the nose), to inhale, to smoke'. -q^{h}ol- occurs uniquely with si-, -i$^{\circ}$c- Reflexive. sa$^{?}$sa siq^{h}oli$^{?}$ ya$^{?}$ 'vacuum cleaner', literally 'dirt sucker'.

20. Another semantic area of si-, for what might be termed "paraphonation", is represented in Figure 3 as a bulge into the domain of ba-, and a slight intrusion into p^{h}u-. The prefix for most sounds produced by the mouth, vocal cords, or musical instruments is ba-; si- is employed in certain instances when the sound is somewhat unusual, whether formed with the vocal cords or, more commonly, not. The first two examples provide a link with the meaning of 19., as the sounds denoted are produced by suction.

si$^{?}$t$^{?}$o$^{?}$t$^{?}$ow 'to make a series of ingressive, sucked alveolar t's. -$^{?}$to- 'tap'.

siq^{h}o$^{?}$ 'to snort'. The only other occurrence of -q^{h}o$^{\circ}$t- is in miq^{h}o$^{?}$ 'to snort, to snore', where mi- is NOSE.

silusilu$^{?}$ 'to confuse by fast talk'. -lu-, when reduplicated, means 'smear, blur'.

si$^{?}$lo$^{?}$low 'to sing (of meadowlark), to go tra-la-la, to speak fast and trippingly'. -$^{?}$lo-, when reduplicated means 'roll around, tangle'. Cf. ba$^{?}$lc$^{?}$low 'to talk broken, incorrectly, or in a strange language'.

si$^{?}$ki$^{?}$kiw 'to giggle'. With most prefixes, -$^{?}$ki- means 'narrow down, cut almost through'.

sihk^{h}ahk^{h}aw 'to whisper, murmur'. This root occurs with only one other prefix: šuhk^{h}ahk^{h}aw 'to pant (of dog)'.

sihq^{h}am$^{?}$ 'to grunt, give the vocal rhythm in Kashaya singing, give the bass accompaniment in a musical ensemble, play the bass on a piano'. -hq^{h}am- occurs uniquely with si-.

sisuʔ 'to whistle with teeth and tongue or fingers and tongue'. With other prefixes -sut- means 'scratch off the surface'.

For many of the examples in the preceding sections, the coming together of prefix and verb root particularizes enough of an image that any Kashaya speaker would come up with approximately the same translation; for other constructs there can be enough variability that a fuller context is needed to focus the image. For example, in a peanut-rolling contest side·du might evidently be 'to push along with the tongue', but in other situations 'to sail along' would be the usual interpretation.

There are a large number of verb roots in the language with an "aspectual" meaning. Some have appeared at various points among the examples; a few common ones are -hye°- 'stop', -ʔku- 'complete, finish', -hmu°l- 'fall short of completing', -mhmic- 'do absolutely completely, do to perfection', Such verb roots appear with any of the 20 prefixes, and then the prefix can take on, according to the context, any of the meanings within its scope. Thus sihyew embraces the meanings 'to stop sailing, drinking, licking, sucking, etc.' As with the English word 'stop', the Kashaya word can take a verbal complement to specify more precisely the action that is being stopped: sisal ʔ sihyew 'to stop sucking juice from (an orange)'. However, the Kashaya word sihyew is less ambiguous than the English 'stop', because the use of the prefix narrows down considerably the area of application. As a result, the use of a complement is less often necessary in Kashaya than in English.

Now, verbs such as sihyew can be used to test whether the native speaker feels another verb beginning si- contains the same prefix. Thus, I have asked if it is correct to say sihqʰamʔ sihyew for 'to stop giving the vocal rhythm in Kashaya singing', and the answer was yes (although to me this use was as far out from the core meanings as any example). The other meanings given in Figure 3 have been tested in this way and all were accepted as being in the purview of sihyew, except for two: sihyew was totally denied as appropriate for any of the forms under 14, 'flashing light'. It was waveringly denied for those forms under 11 concerned with 'light air movement'.

HISTORICAL COMMENTS

It is no accident that si- was selected as the first of the prefixes to be given a detailed treatment. It complements, semantically and historically, the subjects of two other recent explorations: WATER (Oswalt 1975) and TONGUE (Oswalt 1977). A prefix *si- can be reconstructed for Proto-Pomo, as all seven daughter languages have regular reflexes with major elements of the meanings itemized herein. There are undoubtedly differences in the particularizations of use, which cannot be stated, for few of the Pomoan languages have had a deep probing of the semantic range of their prefixes.

The moderate number of Kashaya prefixes, twenty, which must encompass a universe of meaning, would favor the semantic extension of any one which was born with a limited range. One might liken a prefix to an amoeba; however small and limited at creation, it can grow and put out pseudopods, or metaphoric extensions. Some pseudopods may never grow further, or may be abandoned; others take hold and expand so that the location of the nucleus of the semantic protoplasm may shift, or it may even split. I am not aware of any convincing evidence within Pomoan that *si- originated with its nucleus located at any one of the areas of meaning illustrated herein, rather than at another. However, there are, in other Hokan languages, enough roots resemblant to *si- to provide a guide to its origin.

Within Pomoan, the most common independent words for WATER, TONGUE, and DRINK bear no phonetic resemblance to the verbal prefix that encompasses these meanings. It happens that those three words, as well as the prefix, can all be reconstructed for Proto-Pomo: *ʔahqʰa WATER, *hibal TONGUE, and *hoʔq̓o- DRINK. For the first two, there are resemblances sufficiently widespread through Hokan to permit a try at reconstruction like the following: Proto-Hokan **ʔa-qʰa WATER, where **ʔa- is a noun-forming prefix (Oswalt 1975); and **H-i-PAL TONGUE, where **-i- is a prefix on terms for body parts, and **H- stands for a laryngeal, **ʔ- or **h-, and may have been a prefix for a third person or indefinite possessor, or may have been an inorganic development on vowel-initial stems. The capital letters in the reconstructions indicate segments whose phonetic nature cannot be specified closely.

In the other Hokan languages there are no multiply attested resemblances to Proto-Pomo *hoʔq̓o- DRINK. The implication is that *hoʔq̓o- is an innovation within Pomoan. I believe that there is a fair likelihood that the core syllable *-ʔq̓o- arose as an imitative of the sound of a gulp or of drinking noisily. The Kashaya verb root ʔq̓o- 'drink' is connected with a symbolic set of such imitatives: q̓ot' 'sound of a gulp (yielding the prefixing verb roots -q̓ot- 'gulp' and -ʔq̓ot- 'choke'), q̓ol 'sound of gurgling' (yielding the verb q̓olo- 'gurgle'), and q̓os 'sound of (dog)

lapping water or of water running in a riffle' (yielding ḍoso- 'slurp', ḍoso°l- 'water to splash gently as in a riffle', ḍohsohso- 'make a lapping sound'). The second consonants of the above forms also have symbolic meanings: stops, such as t', indicate sudden short sounds or acts; the resonant l indicates resonating or continuing sounds; the sibilant s indicates protracted sounds of rubbing, scratching, sizzling, and splashing water. (The system is described more completely in Oswalt 1971). It is certainly no accident that in languages around the world there are forms similar to these in Kashaya, with a consonant articulated at the back of the mouth, toward the throat, occurring in words designating the throat or actions performed there. Examples abound; consider English gargle, gurgle, and gulp. From these it is a relatively slight semantic shift to a more generalized meaning DRINK.

Although it is difficult to find resemblances in Hokan for Proto-Pomo *ho?ḍo- DRINK, it is easy to find them for *si-, not as prefixes, but as the verb roots meaning DRINK:

Proto-Yuman	* s i·	(Consensus of several Yumanists)
Seri	-s·i-	(Edward Moser, personal commun.)
Salinan	-(e)š(e)-	(Wm. Jacobsen, Jr., fieldnotes)
Northern Yana	sii-	(Sapir and Swadesh 1960)
Yahi	cii-	

The more northern Hokan languages share the innovation of having the word for WATER derived from the root for DRINK by means of the Proto-Hokan noun-forming prefix **?a-. Such a prefix seems to be no longer productive in these northern languages (argumentation of these points was presented at Oswalt 1975). The high front vowel appears before the sibilant, or affricate, of the root, rather than simply after it. Whether this was a feature of Proto-Hokan, or was innovated later, is a point that will not be argued here. Note that Shasta and some of the other northern languages require vowel-initial verb roots.

	DRINK	WATER	
Karok	?iš	?á·s	(Bright 1957). The palatization of the sibilant in the verb is automatic in the presence of i.
Shasta	-ic·i-	ac·a	(Silver 1976). Vowel-initial words, like the noun here, automatically begin with ?-.
Atsugewi	-ich-	ach	(Leonard Talmy, personal communication). The forms are written morphophonemically.
Pit River	-is	?às	(Bruce Nevin, personal communication). There are variant vowels in some verb forms.

In those Hokan languages in which DRINK is not of a form related to the above, it is often possible to find a similar form with one of the extended meanings of Kashaya si-. For example, in Chimariko, lu? 'drink' is aberrant, but -s'i- 'suck, nurse' is phonetically very close (J. P. Harrington's fieldnotes). However, I do not intend here to pursue all possible cognates; the meaning DRINK is so clearly predominant that it is the logical choice of meaning for the Proto-Hokan reconstruction **si. Insofar as this is the source of the Kashaya prefix, the original meaning of si- must be that which is centrally located in Figure 3 as the connecting link between the two nodes. There is a natural bias of DRINK toward the WATER node, as illustrated by Karok and the other northern languages; the inclusion of actions of the TONGUE would then be a later, Pomoan development, as would be the many proliferations of use in both the WATER and TONGUE lobes.

ba- mouth, snout, beak, vocalizing, speaking, singing, (reciprocally) by hearing (any sound).

bi- soft opposed forces, encirclement, sewing, with both arms, embracing, lips, eating with a spoon.

ca- rear end, sitting, moving backwards, massive object, knife, cutting.

$c^{h}i$- small or constricted part of a larger object, instrument with a handle, hook, suspend.

cu- controlled nonlong object (rock, wad of material), rounded part of the body (head, shoulder, knee, elbow), front end; flowing or spouting water; shoot, gamble; vegetative growth.

da- hand, palm, paw, waves, fog; (in certain descriptive verbs) grouped long objects (hair, bones, branches).

di- gravity, falling, pressure of a weight; genetics, race; cutting many long objects (hair, branches).

du- finger, finger opposed to the thumb, finger-like object, generalized work.

ha- uncontrolled long object, leg, kicking (especially backwards), swinging, wing, flapping.

hi- of or with the body as a whole, at least not purposefully with one of its individual parts.

ma- bottom of the foot, sole, hoof, claw (of birds); twisting motion of the hand or wrist.

mi- small protuberance on a larger object, toe, nose, chin, horn, back of fingernail, kicking forward, smelling, snorting, reckoning, reading, small devices, clouds.

mu- energy (thermal, photo, kinetic, psychic), heat, cold, light, fire, mind, emotion, pain, disease, quick movement, mechanisms, uncontrolled nonlong object.

$p^{h}a$- long object move lengthwise into contact, poke, stab, stiff-legged; wrapping, enfolding, squeezing in palm.

$p^{h}i$- long object act sidewise (bat, stick, axe, hoe, hammer), eyes, see, face, neck, surf, breakers.

$p^{h}u$- wind, blow (of wind or mouth); burn transitive.

qa- hard opposed forces, teeth, jaws, pliers, wrench, crowbar, bite, chew, pry, grip strongly.

ša- long object move lengthwise into or thru or in and out, phallus, thru a membrane (mesh, net, hole in container).

si- water, rain, float, dissolve, stick, slip, wobble, flash, drink, tongue, lick, suck, paraphonation.

šu- long flexible object (rope, stockings), pull, push and pull, breathe.

KASHAYA VERB PREFIXES

Table 1

Northern Pomo Verbal Suffixes

Michelle Caisse
Department of Linguistics
University of California
Berkeley, CA 94720

1. Introduction

Northern Pomo verbs characteristically have the structure: prefix, followed by root, optionally followed by one or more suffixes. The prefixes are usually referred to as "instrumental prefixes", and indicate features of the instrument, of the patient, or of the action itself. They have a CV syllable structure, whereas the root is a single syllable which may have a long vowel or a final consonant. Most, but not all, stems contain a prefix, and thus contain two syllables. This paper will describe the morphemes which may be suffixed to the verb stem of an isolated clause. There is another class of verbal suffixes, those which mark switch reference and relative time in a clause chain; these will be described by O'Connor (1981).

2. Tense and Aspect

Normally, when one of the evidential suffixes is used, the action is taken to have occurred in the past. Of the evidentials, as one would expect, the visual evidential /-ye/, becoming /-y/ after a vowel, is the most frequently used, and it is usually simply glossed as past tense by the speaker. There may be circumstances in which its use does not imply that the speaker saw the action, although usually one of the other evidentials would then be used instead.

Kawí-nam mená-y
child-det. cry-vis.ev.
The child cried.

wáy?e man bu-nam čaxá-m-ye
earlier she potato-det. cut-pl.act2-past
She was cutting potatoes.

The copula /na/ is used to denote past tense when the speaker has inferred that the action has occurred, not having seen it, heard it, or heard of it. Oswalt (1970) reconstructs a Proto-Pomo inferential *-qa or *-ka, but Northern Pomo lacks a cognate to this suffix. The

Northern Pomo inferential past formally resembles a perfect in that it is constructed from verb plus present tense of the copula (Comrie, 1976); further, the speaker glosses it with an English perfect. A perfect semantic does seem appropriate, in that the action will have present relevance at the time that the speaker has become aware of it, since the action is inferred from current evidence. Comrie has pointed out that a close formal relation exists between the expression of perfect and inferential in Bulgarian, Georgian, and Estonian; he also points out the semantic similarity between the two categories. That Northern Pomo exhibits the same correspondence adds strong support to the case that universal processes are involved.

xalé-nam ša:m-na
tree-det. fall-dir.-infer.ev.
The tree has fallen.

Another morpheme used to denote past tense situations is the form /-me/, the marker of distant past. It can also have simply an emphatic meaning.

še:tin mo: bo: kohú-me
long ago he here come-dist.past
He came here long ago.

mo: bo: kohú-me
he here come-dist.past
He did come here! or
He came here long ago.

The habitual suffix /-ʈ^{h}e/ combines past tense with repetitive aspect.

ʔal siká-namu ʔa: semámiʈí-ʈ^{h}e
dem. baby basket-in I sleep-hab.
I used to sleep in a baby basket.

The near-future suffix is /-čade/, which becomes /-ade/ after consonants. Since the full form /-čade/ is not reconstructable for Proto-Pomo (Oswalt, 1970), I hypothesize that it derives from the semelfactive suffix /-če/ plus /-(a)de/ a form which may be related either to the N.Pomo directional suffix, or to an earlier near future *-...d... reconstructed by Oswalt. I feel that this interpretation is quite plausible on the basis of the inchoative meaning of the semelfactive suffix, which I discuss later.

ʔa. hay-nam čac'á:-čade
I stick-det. break-near fut.
I'm going to break that stick.

p^{h}ow hay-nam čac'á-m-ade
they stick-det. break-pl.act2-near fut.
They're going to break that stick.

The future suffix is /-kʰémna/ or /kʰéna/. The factors conditioning the choice between these two, if any, are not known; however, the first is much more common. The form used in questions or subordinate clauses is /-kʰe/, which suggests that the /-na/ ending derives from the copula and that the /-m/ is also segmentable.

čibá ta bu-nam čaxá-m-kʰe
who Q potato-det cut-pl.act2-fut.
Who will cut the potatoes?

Mary bu-nam čaxá-kʰémna
potato-det. cut-fut.
Mary will cut the potato.

ʔul man duhú-kʰe to: t'a
soon she leave-fut. me think
I think she'll leave soon.

The semelfactive suffix /-če/ becomes glottal stop before a consonant, unless a three-consonant cluster would result. Semantically, it functions in three superficially distinct ways. Its name derives from its behavior with a class of verbs which in their unmarked form convey repetitive action; this class includes verbs such as hit, kick, slap, tap, and so on. For example /pʰabán/, 'to hit repeatedly', /pʰabáčen/, 'to hit once'. These verbs however, comprise a relatively small class. More commonly, /-če/ will be suffixed to a verb which is inherently durative, or which requires being marked for aspect, to yield a completive form. For example /maʔá/ 'eat', /maʔáče/ 'eat all up'. Finally, if a stative verb is suffixed with the semelfactive marker, the resultant form is inchoative. For example /deṭʰále/, 'be hurt', /deṭʰáče/ 'get hurt'. These three functions are all compatible with the semantic aspectual category "perfective". Both semelfactive and completive functions follow from the definition of perfectivity as describing an action which is complete and viewed as a whole. Comrie (1976) has shown it to be true of many languages that perfective forms of stative verbs can have inchoative meaning.

There are two suffixes, /-m/ (word finally /-ma/) and /-ta/ which indicate that an act has been repeated more than once. Their use seems to be largely lexically governed, though there may be some semantic distinction between them. An act repeated by one agent on more than one object is marked by /-m/ and an act performed by more than one agent on one or more patients is marked by /-ta/. An intransitive act repeated by one agent may be marked by either; and they both may occur simultaneously on some stems. Some stems seem to permit neither; plurality of act is not obligatorily marked.

man na:ma k'ilúk'ilú-m-ye
she always cough -pl.act2-past
She is always coughing.

šapʰá mina mo: maká-ta-ma
leaf on he step-pl.act1-pl.act2
He stepped on the leaves.

3. Mood and Mode

The negative suffix in /-nha/, or /-anha/ after a consonant.

mo: k'o hay-nam čac'á-nha
he neg. stick-det. break-neg.
He can't break the stick

The imperative is -m, or -am after a consonant.

ʔal p^hik'á-nam p^hidé-w-ka-m
dem. basket-det. hang(intrans.)-dir.-caus.imper.
Hang up this basket!

The morpheme of capability, /-male/, means that the actor is capable of performing the act.

ʔa: k'o čá-xawé-nha-malé
I neg house-build-neg.-cap.
I can't build a house.

The morpheme of possibility, -ṭilna, indicates that an action might occur or might have occurred.

mo: duhú-k^he-ṭílna
he leave-fut.-poss.
He might leave.

The perferabilitive, -k'edína, denotes that the speaker feels that it would be better if the action occurred.

ʔa: bišé-nam mit'á-ʔ-k'edína
I meat-det. cook-semel.-pref.
I ought to cook the meat.

4. Voice

The voice suffixes are quite uncomplicated in their semantics and morphology. There is a reflexive /-ʔ/, reciprocal or plural reflexive /-muʔ/, imperative /-(a)m/, causative /-ka/, passive /-ya/ (-ʔa after a consonant) and hortative /-ya/. The glottal stop of the reflexive and reciprocal suffixes is followed by an echo of the previous vowel word finally. All occur quite commonly except the passive and hortative, and the latter is rather uncommon. The passive formed by adding /-ya/ involves no change of case marking on the arguments; the agent is simply deleted.

ʔa: ɬ'ayé dasé-ʔe
I refl.pron. wash-refl.
I washed myself.

ya xol dac'áp-če-mu?ú
we recip.pron. slap-semel.-recip.
We slapped each other.

?al p^{h}ik'á-nam p^{h}idé-w-ka-m
dem. basket-det. be hanging-up-cause-imper.
Hang up this basket!

bo: ma p^{h}idí-hala mitó čadí-ya-k^{h}émna
here you,A wait-cond. you,O see-pass.-fut.
If you wait here you'll be seen.

ča-l p^{h}íli-či-ya
house-loc. go,pl.-semel.-hort.
Let's go to my house.

5. Evidentials

There are five evidentials in Northern Pomo. The visual /-ye/ (which becomes /-i/ after a vowel) and the inferential /-na/ have been discussed above. The aural /-anhe/ indicates that the action was heard by the speaker. The reportorial, /-hin/ indicates that news of the action was reported to the speaker by someone else. When it occurs, it is followed by another clause consisting of a noun or pronoun referring to the person who reported the act, and the verb 'to say', /he/. Or, it may be followed by /-hia/, 'say' + passive, to mean 'it is said'. Semantically, this is identical to the quotative /-do/; the latter seems to be more formal, and is frequently used in stories.

kawí mená-nhe
child cry-aur.ev.
I heard the baby crying

man hay-nam čac'á-hin - mo:-he
she stick-det. break-rep.ev.-he-say
He told me that she broke the stick

hayú-nam-ya? bak'ók'-hin-hía
dog-det-A bark-rep.ev. it is said
The dog was barking, it is said

kawía-bá:-nam makó-ya-do-i
child-male-det find-passive-quot.evid.-vis.evid.
The boy was found, it is said.

6. Directionals

There are a number of directionals which may be suffixed to verbs of motion to indicate the direction of motion. Several of them have the effect of lengthening a stem-final vowel of the verb. The directionals are:

/-w/ up, in the sense of leaving a rest position.

- -(a)ma across
- -:(a)ka along; following an edge or a path determined by some object or feature of the landscape.
- -mulu(ʔ(u)) circling around an object; near or past something
- -:(a)de along in one direction. The allomorph before a consonant is /-(a)n/.
- -kače travelling in an upward direction
- -:(a)la down

lum sélka tu badé-:de
thorn-bush fence on grow-along
The vine was growing along the fence.

xalé-namil lum-nam badí-kače
tree on thorn bush-det. grow-upward
The vine grew up the tree.

lum-nam xábeda badí-ma
thorn bush-det. creek grow-across
The vine grew across the creek.

xalé-namil lum-nam badí-mulu
tree- on thorn bush-det grow-around
The vine grew around the tree.

da-da mo pʰaʈípʰaʈí-:ka
path-on he stagger-along
The staggered along the path.

c'it-nam pʰidé-w-če
bird-det. fly-rep-semel.
The bird flew away.

šapʰá baʈʰé pʰité-:la
leaf many drift,fly(pl.)-down
Many leaves were drifting down.

There are some instances of the use of /-(a)ma/ and /-(a)de/ which can't be explained as directionals. These are believed to represent the earlier "essive" and "durative" morphemes that Oswald (1970) reconstructs. He defines essive as "indicating a steady condition or state, [or] action in a delimited area...".

malíma 'be burning' cf. maliče 'burn up'

tóma 'be standing' cf. toče 'stand up'

kadóma 'hold in the mouth'

kadóde 'chew'

bišéma 'rain'

banéma 'flow'

basáma 'give a speech'

čanówde 'be talking'

bayé:de 'instruct'

bičóde 'fell'

dá?ade 'want'

tá?ade 'feel, believe'

Northern Pomo Verbal Suffixes

I. Tense and Aspect

1.	future	-k^he, -k^hemna, -k^hena
2.	near future	-(č)ade*
3.	distant past	-me
4.	habitual	-ṭ^{h}e
5.	semelfactive	-če → ?/_C
6.	plural act 1	-ta
7.	plural act 2	-m → ma/_#

II. Mood and Mode

1.	negative	-(a)nha**
2.	imperative	-(a)m
3.	optative, conditional	-hala
4.	capability	-male
5.	possibility	-ṭilna
6.	preferability	-k'edina

III. Voice

1.	reflexive	-? → ?V/V_#
2.	reciprocal, plural reflexive	-mu? → mu?u/_#
3.	causative	-ka
4.	passive	-ya → ?a/C_
5.	hortative	-ya

IV. Evidentials

1.	visual	-ye → y/V
2.	inferential	-na
3.	aural	-(a)nhe
4.	reportorial	-hin
5.	quotative	-do

V. Directionals

1.	up, begin	-w
2.	across	-ma
3.	along (an edge or path)	-:ka
4.	around, near, past	-mulu, mulu?u
5.	in one direction	-:(a)de → n/_C
6.	upwards	-kace
7.	down	-:(a)la

---

* The consonant in parentheses is deleted when it follows a consonant.

**Vowels in parentheses are deleted when they follow a vowel.

7. Vowel Length Reduction

Some verb stems have a final long vowel. This vowel becomes short before most suffixes; it remains long before those that begin with /č,h,n/. Note that length is lost before the glottal stop allomorph of the semelfactive suffix /-če/. Vowel length is also reduced before any consonant cluster.

8. Morphemic Syntax

Usually a Northern Pomo verb will be suffixed with one or only a few suffixes. When more than one suffix occurs, they will be found in the following order:

direction - aspect - causative - reflexive / reciprocal / passive - negative - mode - hortative / imperative / tense / evidential

Not all combinations of morphemes implied by this formulation are attested, and many are probably not possible. Since the morphemes /-na/ and /-ye/ act both as evidentials and tense markers, their behavior is somewhat anomalous. In general one can't get both a tense and are evidential morpheme on one stem; however, the combination /-na-i/ does occur, and is usually glossed with an English past perfect. As was discussed above, the two plural aspectuals /-ta/ and /-m/ may occur together in that order.

ʔawe: mo: k'o deɬʰá-ʔ-ka-ʔa-nha-hala
hope he neg. hurt-sem.-caus.-refl.-neg.-opt.
I hope he doesn't hurt himself

Financial support for fieldwork on Northern Pomo was provided by the Survey of California Indian Languages. I would like to express my deep appreciation to Mrs. Edna Guerrero for serving as language consultant for this research. I would like to thank Cathy O'Connor for her advice, enthusiasm, and energy.

Some Uses of Case-Marking in Northern Pomo

Catherine O'Connor
Department of Linguistics
University of California
Berkeley, CA 94720

0. Introduction

In his 1979 paper "Ergativity", R.M.W. Dixon describes several types of "split ergative systems". One of these is conditioned by the semantic content of the nominal. That is, NP's will be treated[1] in a nominative/accusative fashion if they are inherently likely to be agents. The O-function is marked[2], while A's and S's are unmarked. This reflects the fact that NP's which rank high on the agency/animacy hierarchy are more likely to be actors and experiencers than they are to be objects and patients. NP's which are lower on the animacy hierarchy will be marked in an ergative/absolutive fashion. That is, S's and O's will be unmarked; when an NP occurs in the unaccustomed role of agent, it will be marked with the ergative. (For a detailed discussion, see also Silverstein, 1976).

Another major type of split ergativity, not usually found in languages which have a nominally based split, is conditioned by the semantic content of the main verb. That is, typically, NP's in A and O function are marked invariantly, but S's can be marked like A's or like O's, depending on the degree to which the action described by the verb involves agent-like qualities (volition, control, responsibility etc.) or patient-like qualities. Verbs like swim, stand up, and shout, which usually involve conscious control by the subject would be marked like A-function nominals. Verbs like burp, dream, and blush, which do not typically involve control, are then marked as O-function nominals. A rare form of this "split S-marking" is "fluid S-marking", in which the case choice for the subjects of certain intransitive verbs is determined by the nature of the particular instance of the verbal action to which the speaker is referring. That is, if the speaker decides that the subject was particularly involved in, responsible for, or controlling of the action in the clause, that speaker will mark the subject in the nominative case. If the subject was more passively involved, or had no control over the action, the speaker might mark the hearer in the accusative case.

After Dixon describes these splits, he speculates as to their distribution in the languages of the world:

> I know of no examples of languages that combine a split conditioned by semantic content of verb with a split conditioned by semantic content of NP's, where both splits are realized in terms of morphological marking of the same kind....In one instance, [the first] semantic nuances in intransitive sentences are, as it were, calibrated against a constant transitive schema; in the other the semantic orientation within transitive

> sentences is brought out against an invariable intransitive matrix. If both were allowed to vary simultaneously--useful as this would be, to bring out all the relevant semantic niceties--there would be no constant element, and surely a likelihood of confusion and ambiguity....Dual conditioning of case-marking 'splits' of the type just suggested, might lead to irresoluble anarchy, i.e. to semantically-sponsored variation that could go beyond the limits allowable by a grammar.
> (Dixon, 1979, p.91)

Northern Pomo has just such a combination of 'splits', both of which are realized through the same morphological device: the case-marking of nominals. In the rest of this paper, I will present a preliminary investigation of such semantically-sponsored variation in N. Pomo. A description of both case-marking splits and their interactions may provide the basis for an understanding of how this variation succeeds in staying within "the limits allowable by a grammar", whatever those limits may be.

1. Case-marking split conditioned by the semantic content of NP's

Dixon states that nominally based splits usually have the NP appear in its unmarked case when it is in S-function. NP's low in agentivity will appear in the absolutive case in S-function, and in the ergative case in A-function. In N. Pomo, this pattern is not so clearly evident. A-function, or subjects of transitives, can be absolutively marked (1), whereas subjects of intransitives are sometimes ergatively marked (2).

1) bitánam misáxalánam čabáne[3] "The bear killed the snake"
bear+det snake+det. kill+past

2) hayúnam ya? t^{h}á?ye "The dog played"
dog+det Erg play+vis.evid.

The interaction of the two types of splits makes it difficult to use arguments based on coocurrence of NP's with transitive or intransitive verbs to establish whether certain categories of nominal participants pattern nominatively or ergatively. Therefore, I will present evidence based on morphological markedness.

1.1 Patterning of nominals.

Dixon argues that in nominative/accusative systems, not only does the S pattern with the A, but the O-function NP is morphologically marked with respect to the S/A nominals. In an ergative/absolutive system, the A-function NP is morphologically marked. As seen in table 1, the nom/acc pattern of markedness applies to the categories of the NP hierarchy starting at the top.

Personal pronouns are morphologically simple in the A-function, (as well as being the citation form) and are suffixed with /-V1/ in O-function. (The 1st and 2nd person singular depart slightly from this paradigm. The /-to/ suffix which they take appears as the O-function

marker on proper names also. Kinship terms and proper names follow this nominative/accusative pattern of markedness.

The next category, which McLendon has named personal nouns for Eastern Pomo, is a small but frequently used set of nouns that specify age and sex of the referent. The E. Pomo NP's of this sort pattern with the common nouns below them on the hierarchy, i.e. in an erg/abs fashion. The N. Pomo personal nouns have two forms: one which patterns with common nouns, in an ergative fashion, and one which suffixes an independent third person pronoun, matching in gender, and then patterns like the independent pronoun. This category, then, is the point on the nominal hierarchy at which the nom/acc and erg/abs case-marking patterns overlap.

Common nouns, the next category down the nominal hierarchy, can take an ergative suffix /-ya?/ when in A-function. The unmarked absolutive form is most commonly the stem with the determiner suffix /-nam/.

Nominals in N. Pomo

(The A-function of the NP is listed first, then the O-function. The markedness pattern shifts in the middle of the personal nouns.)

PRONOUNS:	1s) ʔa to 2s) ma mito	3s) fem: man ma:dal
	1p) ya ya:l 2p) ma: ma:l	msc: mow mowal
		3p) p^{h}ow p^{h}owal
KINTERMS:	father(of 3rd pers.) baʔe	baʔe:l
	younger brother(spkr) miti	miti:l
PROPER NAMES:	John: čon	čonto
PERSONAL NOUNS:	young man: dakosanam+mo	dakosanam+mowal
	older woman: datanam+man	datanam+ma:dal
	young man: dakosanam+yaʔ	dakosanam
	baby: kawinam+yaʔ	kawinam
COMMON NOUNS:	dog: hayunam+yaʔ	hayunam
	arrow: čunam+yaʔ	čunam

1.2 The ergative marker in a transitive clause.

Examples (3) and (4) illustrate case assignment in a normal transitive clause with two human participants. Notice that in (4), baby, a personal noun, is in its common noun form, and takes the ergative marker.

(3) man mowal čábane "She killed him."
3sfNOM 3smACC kill+pst.

(4) mówal kawínamya? sípuni "the baby kissed him."
3sm ACC baby ERG kiss+pst.

In many transitive clauses the ergative marker seems to be optional. In (5) it can be used or not, depending on contextual ambiguity.

(5) bitánam $\begin{matrix} ya? \\ \emptyset \\ \emptyset \end{matrix}$ misálxalánam čabane "The bear killed
bear+det ERG ABS snake ABS kill+pst. the snake."

However, in (6), where the agent is counter to our expectations, the ergative marker must be used.

(6) čítnam ya? bitánam čabane "the bird killed the
bird+det. ERG bear ABS killed bear."

In section 3.1 I will say more about the ergative marker in other contexts.

2. Case-marking split conditioned by semantic content of main verb

In evaluating Dixon's assertion that split and fluid S—marked systems are calibrated against a constant transitive schema, one must draw together evidence of all case-marking patterns, for both transitive and intransitive subjects. In addition, if the language has very productive word-formation processes that detransitivize verbs, these must be considered, since they will bear on the question of invariance of transitive and intransitive schemata.

In what follows I will take the tack of maximizing the semantic distinctions that are conveyed by variation in case-marking, instead of trying to reduce all uses to one unitary category.

2.1 Implicit causes.

In the case of some intransitive verbs, the unmarked form of the subject seems to be the nom/erg form. The use of the acc/abs seems to indicate a heightened patientivity; this in some way implicitly raises the issue of a cause for the action:

(7) mow kala kʰémna "He will die"
3sm NOM die future

mowal kala kʰémna "He has done something or eaten
3sm ACC die future something that will result in
his death."

(8) man pikái "She laughed."
3sfNOM laugh+past

ma:dal pikai "She laughed (at something; some
3sf ACC laugh+past thing made her laugh.)"

Notice that in (7) and (8), although there is an implicit cause of the action, there is no explicit verbal indication such as a causative or passive marker. The presence of an unspecified agent or cause is

accomplished through changing the case role of the subject from that which is usually for agentive Actors, to that which is usually used for Patient-like objects of action.

If a causative is added to the verb, as in (9):

9) ma:dal pikaí ka "Someone made her laugh (deliberately)."
3sf ACC laugh caus.

then the is in some sense still intransitive, as in (7) and (8), but her patientivity is foregrounded. This tends to make (8) look like more of an experiencer role; perhaps passive experience, but still, less patient-like than (9).

2.2 Lack of control.

Another set of intransitive verbs is different from the above, in that the use of the acc/abs does not emphasize patient-hood so much as it does lack of control over the action. There is no implicit cause as there was above.

10) man xá da lóka "She fell in the river."
3sfNOM river loc. fall

ma:dal xá da lóka "She (accidentally) fell in the river."
3sf ACC river loc fall

11) mow šiʔúdi "He didn't know; he was incapable."
3sm NOM 'can't'

mowal šiʔúdi "He didn't know anything; he was really out of it, lost."
3sm ACC 'can't'

12) to toxa mow pitíka "He belched at me."
1s ACC dir. 3smNOM belch

to toxa mowal pitíka "He couldn't help it, he belched at me."
1s ACC dir 3sm ACC belch

13) man dítale "She is sick."
3sf NOM be sick

ma:dal dítale "She is feeling the sickness."
3sf ACC be sick

14) a. mow šínu čade "He is going to get drunk('tie one on')."
3sm NOM-be drunk-nr.fut.

b. mowal šínu čade "He is going to get drunk ('oh, no, he's losing control')."
3sm ACC be nr.fut.
drunk

As the sentences in (14) show, the case marking interacts not just with the verb, but with the tense markers (and other parts of the verbal morphology; see below). In (12a), the near future marker is interpreted as signalling intention in the part of the nominally marked subject. In (12b) the near future is interpreted as signalling the approach of an event seen as 'befalling' the subject.

2.3 Agentivity and volition.

In 2.2, the accusative signalled lack of control over internal states and conditions. In (14) it was apparent that the nominative can signal intention when paired with the indicator of future tense. Other verbs, which do not have a basic connotation of lack of control, unlike the verb in (14), can also convey volition through the use of the nom/erg case marking; however, the use of the acc/abs does not convey such a strong sense of lack of control:

15) mowal ʔa šiʔúčiʔi "I will forget him (I'll obliterate his memory)."
3sm ACC 1sNOM forget

mowal to šiʔučiʔi "I will forget him (I'm not interested enough to rememb.)"
3sm ACC 1sACC forget

With predicates that do seem to have an inherent degree of lack of control it is sometimes possible to get a reading of heightened volition or agentivity even without the future tense markers.

16) kaweyónam yaʔ šiʔutiči "The horse gets crazy, acts crazy."
horse ERG be crazy

kaweyónam šiʔútiči "The horse is crazy."
horse ACC be crazy

2.4 Interaction of case-marking with person-marking: speculations about some secondary meanings.

With many of these fluid S-marked verbs, the nominative form of the 1st person, when used with the future or near future markers, indicates willfulness or volition:

17) ʔa pitík čade "I am going to belch (rude:intentional action)."
1s NOM belch nr.fut.

to pitík čade "I am going to (be overcome by) a belch."
1s ACC belch nr.fut.

18) ʔa kelú čade "I am going to cough. (unmarked announcement)"
1s NOM cough nr.fut.

to kelu čade "I feel a cough coming up."
1s ACC cough nr. fut.

However, when a parallel construction is done with the third person, the conveyed intentionality does not emerge. Instead, prediction, assertion or possibility take over:

19) man yatʰ kʰemna "She will vomit."
3sf NOM vomit future

ma:dal yatʰ kʰemna "She is prone to vomit."
3sf ACC vomit fut.

20) man šikík čade "She will have a fit."
3sf NOM have nr. fut.
fit

ma:dal šikík čade "She might have a fit."
3sf ACC

When the notion of possibility is made explicit, then constructions in the accusative are consistently glossed by our consultant as being less probable:

21) man du šikíkči k^{h}emna "She might have a fit."
3sfNOM mod. have fit fut.

ma:dal du šikíkči k^{h}emna "She might have a fit."
3sf ACC

Another difference between the third and first persons emerges when these verbs appear without a future marker. With many of the fluid S-marked verbs, the nominative, agentive form of the 1st person is not felicitous. When used with such verbs as cough, burp. belch, hiccup, fall, vomit, have diarrhea, be unable/incapable, get sick, catch cold, be injured, be crippled, and be annoyed, among others, the first person must appear in the accusative form. However, this restriction does not exist in the 3rd person.

Instead, sentences in which the nominative and accusative 3rd person pronouns can very often have a force that does not at first seem to be directly related to the patient/experiencer distinction.

22) mow lóka "He fell and you saw him fall. (You might
3smNOM fall say this if you see someone fall, and then
you're reporting it to someone else.)"

mowal lóka "He fell (and you're telling about it
3sm ACC fall later. You didn't necessarily see it.)"

It is possible to provide contexts for this distinction; e.g. if a little girl enters your presence and you can see that her knees are skinned, you can ask her mother

23) ta man mítečči "Did she slip?"
Q 3sfNOM slip+smlf

If, on the other hand, the girl is not there, but you have heard that something happened to her, you could inquire:

ta ma:dal mítec či "Did she slip?"
Q 3sfACC slip+smlf

I would like to suggest an analysis of such uses. The meaning potential for nom/acc case alternation is different for 1st and 3rd persons, because the 1st person has access to his or her internal states, is able to judge just how volitional some activity was or will be, and is generally able to state with certainty the degree to which he or she was a patient or experiencer in some instance. The speaker cannot posit an internal state of another person with the same certainty. Therefore, in many cases the intentional meaning dissipates in the 3rd person case, and is replaced by a category which the speaker has control over;

e.g judgements as to the possibility of some event. In cases where the 1st person would only use the accusative for him or her self, the distinction between nominative and accusative for 3rd person carries some constraints that are linked to justification of assertions based on source of evidence. That is, there are certain contexts in which it is less acceptable to take the liberty of predicating an internal state or experience of someone else. A Kashaya Pomo speaker offered this sort of explanation when asked why, in her language, one couldn't say the equivalent of mowal xa?ančí or "He(ACC) dreamed". She asserted that one couldn't say that because one couldn't know for sure whether 'he' had dreamed for certain, or that he was just telling you that he dreamed.[4]

It is difficult to adduce proof for this distinction. The judgements are heavily contextually determined, and the distinction is a subtle one. However, there is a clear direction in our consultant's glosses. The nominative is used for the speech situation where the speaker is reporting the facts as observed. The language has a well-developed evidential system, and this provides some of the basis for the argument. If speakers consistently pay attention to the source of information, and mark this grammatically, then a framework would already exist within which this distinction would make sense. There is sketchy evidence that the accusative form is disfavored with the visual evidential, and with the inferential/perfective /-na/.

Of course, if this concern to not go beyond one's ability to verify exists in the language, there must also be a context in which a speaker can assume the perspective of another, and can describe the internal experience of another. This is the narrative context, in which the speaker has license to portray such things.

Unfortunately, conversational contexts would have to be examined in order to fully bear this out, and because there are only a few speakers of this language, it will probably not be possible to fully verify the analysis.

2.5 Additional uses.

There is another distinction that is somewhat less clear, yet it too is glossed consistently when it appears. In the following examples there seems to be an attempt on the part of our consultant to portray the action either as something which is a completed action on the part of the subject (nominative) or as something which is in an imperfective state, that the subject may still be experiencing.

24) baka? šiʔuči " The grandfather forgot"
gr,father forget
NOM

baka?al šiʔuči "The grandfather has forgotten."
gr.f. ACC forget

25) mow paṭipaṭiʔna "He has staggered."
3smNOM stagger+perf/inf.

mowal paṭipaṭiʔna "He has been staggering."
3sm ACC stagger+perf/infer.

When the construction is one in which the subject in the nominative is glossed as being one which is in a certain state, then the corresponding accusatively marked subject will yield some kind of process or experience interpretation:

26) mow ši?u?na "He is crazy."
3smNOM crazy+cop.

mowal ši?u?na "He went crazy."
3smACC crazy+cop.

(This use, however, does not seem to be very productive, and interacts with the position of the NP in the animacy hierarchy. See ex. 16)

3. Grammatical uses of case-marking in Northern Pomo

The previous section detailed many semantic distinctions available in the language through manipulation of case assignment. The following section will be concerned with more grammaticalized uses of case marking. Although some of the uses can still be semantically motivated, and are often verbally governed and not fully generalizable into a purely grammatical rule, still, these uses are not as semantically volatile. Instead, they can be said to function in establishing relations of subordination and coordination, for example.

There are a few verbs which trigger acc/abs case marking of the subject of their sentential complement. Among these are 'want' /da?ade / and 'desire/prefer' or 'attempt' /mayucin/. These verbs also require the causative to be suffixed onto the lower verb.

27) man mowal duhuka da?ade "She wants him to leave."
3sfNOM 3smACC leave+Caus. want

However, the verbs wish, hope, fear, etc. do not follow this pattern.[5] Neither do the verbs see , know, hear, etc. when these take a sentential complement.

The verb 'force' is realized as the causative morpheme suffixed onto the subordinate verb. The NP that is the subject of the lower clause, is raised to object of the causative clause through accusative case-marking. The subject of the matrix clause must be marked in the nominative or the ergative. As noted in sect. 1.1, subjects of transitives which are from the lower portion of the animacy hierarchy do not have to be marked in the ergative in many cases, unless some ambiguity exists. However, when the causative is suffixed onto the verb, the ergative marker is obligatory.

28) pʰitanam mul ya? datanam ma:dal iska
flower deic.ERG old woman ACC sneeze+Caus.
"Those flowers made the old woman sneeze."

29) xanam ya? to sičuka "The water made me hiccup."
water ERG 1sACC hiccup+Caus.

Certain verbs which are highly transitive semantically, (i.e. their subjects must be agentive or forceful, and their objects are totally affected patients) may call for the ergative marker with inanimate or non-human subjects:

30) yanam ya? čanam madoyóli "The wind destroyed the
wind ERG houseACC destroy house."

This can be contrasted with the perspective change provided by use of the instrumental:

31) yanamili čanam šama "The wind destroyed the house;
wind+inst.houseACC fall through the wind, the house fell."

and also with (32):

32) yanam ya? čanam šamka "The wind caused the house to fall"
wind ERG houseACC fall+Caus.

(However, as usual, there are exceptions:

33) mul ma?anam to pitíkčika "That food made me belch."
deic. foodACC 1sACC belch+smlf+Caus.

I do not know at this point whether these are systematic exceptions or not.) When the cause is in the instrumental (that is, it is followed by one of the instrumental type postpositions, it cannot take the causative.

34) hai wei ma:dal dikecči (*ka) "The stick scraped her."
stick instr. 3sfACC scrape (*Caus)

3.1 The'passive'.

We have seen that the causative sets up a highly transitive, nom/acc type semantic schema, and calls for the case-marking which would correspond to such a schema. The accusatively marked NP's in causative sentences are clearly patient-like. This can be contrasted with the semantic import of the accusative in section 2. The fluid S-marked verbal subjects are not characterizable in the same unified way. Instead, their semantic role seems more experiencer-like.

There is one more construction I would like to present as part of this scale of semantic and grammatical role distinctions: a passive construction. This is not a full Indo-European type passive: the agent can never appear on the surface, the NP which does remain on the surface is not advanced to nominative case; however, the verb does have a passive suffix attached (/-ya/, nearly homonymous with the ergative).

It is possible to show that the surface argument in this passive construction is not a "subject" in the same sense as are the nominatively marked subjects of transtives, active intransitives, and nominatively and accusatively marked subjects of fluid S-marked verbs.

Although I will not go into the details here, the Actor, (a category which includes nominatively marked NP's) and the Experiencer (NP's which are the accusatively marked subjects of fluid S-marked verbs) both are able to trigger a special set of pronouns that are coreferential to these arguments. The surface "subjects" of passives cannot trigger these. In addition, the surface NP of a passive can not trigger the same reference verbal suffix marker within the switch reference system. That is, it cannot occur in a construction where it would have to be interpreted as being coreferntial with the subject of an adjacent clause.

In conclusion, I have presented a selection of data which exemplifies the range of clause-level semantics that are accomplished through case-marking in Northern Pomo. The verbally and nominally based case-marking splits are interacting in a complex but fluid fashion; they together produce a range of configurations that convey a wide variety of semantic perspectives on the clause. More research is required to determine the best theoretical approach to such a richly varied, yet unified set of semantic phenomena.

Financial support for this fieldwork in Northern Pomo was provided by the Survey of California and other Indian Languages, University of California, Berkeley. I would like to express deep gratitude to Mrs. Edna Guerrero, both for her insights into her language, and for her patience and humor while delivering those insights. I would also like to thank Michelle Caisse, whose company during this field work has been both intellectually rewarding and personally encouraging.

Notes

1) In this paper I will refer only to case-marking as a reflex of ergativity. There are other devices, such as verbal agreement, etc. that are equally important, but do not figure in this paper.
2) In Dixon's terms, A-function is the syntactic/semantic relationship carried by the subject of a transitive verb. O-function is the name for the object of a transtive verb, and S-function is that slot for the principle argument of an intransitive verb.
3) Order of elementsdoes not seem to be a device which figures very much in the disambiguation of semantic/grammatical relations.
4) I thank Robert Oswalt for recounting this to me at the Hokan conference in June, 1980.
5) The details of subordination and coordination in this language have not yet been worked out; want /da?ade / is one of the only clear cases where a verb is clearly in a superordinate relationship to a sentence. Many details have been collected on this general issue, but remain to be analyzed.

Evidentials in Maricopa[1]

Lynn Gordon
UCLA

This paper is a historical analysis of the development of the sensory evidential suffixes and the reportative clitic in Maricopa. These two constructions clearly illustrate the evolution of evidential markers from independent verbs.

Aspect and mood in Maricopa are marked by a complex set of suffixes, auxiliary verbs and subordination constructions.[2] The primary aspect/mood markers are the final suffixes on main verbs. The verb has pronominal prefixes which indicate the person of its subject (and object, if the verb is transitive). The structure of the typical verb can be seen in the following:

(1) '-iima-k
1-dance-asp 'I danced, am dancing'

(2) 'nym-aaham-m
2/1-hit-asp 'You hit me'

(3) maa-uum
eat-inc 'He/I will eat it'[3]

Final suffixes are used which indicate the source of the information presented in the sentence. -(k)'yuu 'sight evidential' and -(k)'a 'hearing and other sensory (non-sight) evidential' are suffixes which mark that the information expressed by the sentence is part of the first-hand knowledge of the speaker. -(k)'yuu is suffixed to the main verb of a sentence in which the speaker is asserting something which he or she knows about on the basis of having directly observed the event expressed in the sentence.

(4) m-iima-'yuu
2-dance-see=ev 'You danced (I know because I saw it)'

(5) iima-'yuu
dance-see=ev 'He danced (I know because I saw it)'

(6) '-iima-k'yuu
1-dance-k=see=ev 'I danced (for sure in the past)'

In (4) and (5) the suffix clearly indicates that the speaker observed the activity expressed in the sentence. In (6) in which the subject of the sentences is first person, the evidential sense is less central. When, as in (6), the subject of the verb is the speaker, the evidential reading is typically redundant (it would be uncommon for a speaker not to be present at events in which he or she is a participant) and the suffix is used to indicate that the action or state has actually occurred.

Similarly, -(k)'a is used to mark that the clause asserted by the speaker is from the speaker's first-hand knowledge. The first-hand knowledge is gained, in this instance, through having sensed (typically, heard), but not having seen, the event, as in

(7) m-ashvar-'a
2-sing-hr=ev 'You sang (I know because I heard it)'

(8) ashvar-'a
sing-hr=ev 'He sang (I know because I heard it)'

(9) '-ashvar-k'a
1-sing-k=hr=ev 'I sang (for sure in the past; I heard/felt myself)'

Typically, though certainly not absolutely, -(k)'a is used on verbs of communication of of actions strongly associated with sound, as in (7)-(9) above.

Like -(k)'yuu, -(k)'a, when used on a verb with a first person subject has less an evidential sense than a strong assertiveness about the actual occurrence of the action expressed by the verb. -(k)'a is less likely to be used with a first person subject (and, in general, it is less common than -(k)'yuu with any verb form). Possibly the most typical place this is found is on verbs of 'saying' which are addressed to the speaker.

(10) Pam-sh 'i-m nyip ny-mhan-k ii-'a[4]
Pam-sj say-m me 3/1-like-k say-hr=ev 'Pam told me she likes me'

Before I can account for the distribution of the sensory evidential forms with k and those without k, more more of the structure of the verb must be examined. -k and -m in Maricopa are used as final suffixes on independent verbs of declarative sentences to indicate that the clause is realis and indicative. The speaker presents the information as fact, not as possibility, inference, or preference, and with no hint as to its source or any doubt of its veracity. The event or state which the verb expresses is completed if the action is punctual, as in

(11) 'iipaa-ny-sh puy-k
man-dem-sj die-asp 'The man died, is dead'

(12) mhay-ny-sh ny-aaham-m
boy-dem-sj 3/1-hit-asp 'The boy hit me'

If the action or state is not punctual, then the verb marked with -k or -m expresses an action or state which is either completed or on-going, as in

(13) nyaa '-ashvar-k
I 1-sing-asp 'I sang' or 'I am singing'

*(14) mhay-ny-sh ny-aashham-k 'The boy beat me up' or
boy-dem-sj 3/1-beat-asp 'The boy is beating me up'

If the action is punctual (as those in (11) and (12) are), the verb can only have a completed reading (since it is marked with a realis suffix). If, as in (13) and (14), action is durative or iterative, then it can have either a completed or on-going interpretation when marked with a realis suffix. These is a reasonable outcome of the fact that a punctual action is realis when it is accomplished. The monentaneous nature of a punctual action entails that its onset and its accomplishment are inseparable. A progressive punctual verb is unaccomplished or irrealis or iterative. In Maricopa, puy-k 'die' (as in (11)) and aaham-m 'hit' (as in (12)) are puntual (non-iterative) verbs.

On the other hand, a durative event or state is to some extent accomplished when it is begun. Its onset and completion are separable; from its onset a certain amount of the event or state is real. Thus (13) and (14) can be interpreted as completed or on-going (as past or as present progressive). All the realis suffix implies is that some portion of the event or state has held or is holding. If any portion of a punctual action holds, all of it must hold. Compare (12) and (14): the difference between them is that the verb in (14) is marked as iterative (and, therefore, extendable over time), while in (12) the verb is only interpretable as punctual (realis, and therefore, completed). In (11) the verb is puy-k 'to die' (death is real only when one has died); on the other hand, the verb in (13) is ashvar-k 'to sing' (the moment one has sung even one note, the singing is real).

In Maricopa, the selection of -k or -m as a final main verb suffix is lexically determined based on the morpheme which immediately precedes the final suffix. This morpheme may be the verb root, as in

(15a) aaham-m 'He hit him'
hit-asp

(15b) hot-k
good-asp 'It is/was good'

or it can be any one of a number of non-final suffixes, as in

(16a) aaham-nt-k
hit-too-asp 'He hit him again'

(16b) hot-haay-k
good-yet-asp 'It is/was still good'

(17a) aaham-hot-m
hit-intns-asp 'He really hit him'

(17b) hot-hot-m
good-intns-asp 'It is/was very good'

In (15a) and (15b) the verb root determines which final suffix the verb takes; in (15a) the final suffix is -m, while in (15b) it is -k. In (16) and (17) the non-final suffixes determine the choice of final suffix.[5]

There appears to be no feature or set of features, whether phonological, syntactic, or semantic, which distinguishes -m verbs (verb forms which are marked with -m as their final realis suffix) from -k verbs (verb forms which are marked with -k as their final realis suffix). Both sets of verbs include both active and stative, transitive and intransitive, basic and derived forms.[6]

On verbs of certain subordinate clauses of complex sentences, -k is used to signal that the verb has the same subject as the clause to which it is subordinated, as in

(18) 'ayuu nya-rav-k yoq-k
s.t. when-hurt-ss vomit-asp 'When he$_i$ was sick, he$_i$ threw up'

(19) kafe '-sish-k pastel '-mash-k
coffee 1-drink+du-ss pie 1-eat+du-asp 'We drank coffee and ate pie'

-m is suffixed to a subordinate verb to indicate that that verb has a different subject from that of the clause to which it is subordinate, as in

(20) 'ayuu nya-rav-m yoq-k
s.t. when-hurt-ds vomit-asp 'When he$_i$ was sick, he$_j$ threw up' (i ≠ j)

(21) kafe '-sish-m pastel mash-k
coffee 1-drink+du-ds pie eat+du-asp 'We drank coffee and they ate pie'

This marking of verbs of subordinate clauses as to whether they have the same subject as or a different subject from some other clause in the sentence is in keeping with what is to be expected from a switch reference system (cf. Jacobsen 1967), particularly the Yuman switch reference system (cf. Langdon and Munro, to appear; Munro 1976; Winter 1976).

-m verbs do not participate in the switch reference system. None of these verbs can be marked with -k 'same subject'. These verbs are always marked with -m when the same subject or the different subject suffix might be expected, as in

(22) Bonnie-sh 'ayuu nya-maa-m onyor chaa-k
Bonnie-sj s.t. when-eat-m book read-asp 'Bonnie$_i$ reads while she$_{i/j}$ eats'

Thus in (22) even though the verb of the dependent clause is marked with -m, the subjects of the two clauses can be interpreted as being the same or as being different. The verb must be marked with -m in switch-referencing contexts, regardless of what the subjects of the clauses are.[7]

In Maricopa the sensory evidential suffixes and the perfective suffixes each have two forms, one with a k and one without a k:

	with k	without k
sensory evidential		
sight	-k'yuu	-'yuu
other	-k'a	-'a
perfective		
neutral	-ksh	-sh
emphatic	-ksha	-sha

As exemplified in (6) and (9) the sensory evidential suffixes with k (k-forms) (and the perfective suffixes with k) are used when the subject of the verb is first person. In fact the constraint is stronger than this; aside from having a first person subject, the verb must also be a -k verb (that is, a verb form which takes -k as its final realis suffix and which participates in switch reference) if it is to be marked with -k'yuu or -k'a. In the cases below (23 and 24) the sentences contain m-verbs and therefore cannot be marked with -k'yuu or -k'a, regardless of what the subject of the verb is.

(23a) '-kyaa-'yuu
1-shoot-see=ev 'I shot him'

(23b) m-kyaa-'yuu
2-shoot-see=ev 'You shot him'

(23c) kyaa-'yuu
shoot-see=ev 'He shot him'

(24a) '-mii-'a
1-cry-hr=ev 'I cried'

(24b) m-mii-'a
2-cry-hr=ev 'You cried'

(24c) mii-'a
cry-hr=ev 'He cried'

This association of -k'yuu and -k'a with -k-verbs suggests that the k in the suffixes is segmentable and related either to the switch-reference marking -k or the aspect/mood marking -k. Since the presence of k is conditioned not only by the kind of verb (-k-verb or -m-verb), but also by what the subject of the verb is, it seems likely that the k found in the sensory evidential suffixes is related to the switch reference system which is also sensitive to the subject of the verb. Thus, in (25) which has a -k-verb with a first person subject,

(25) nyaa 'ayuu '-rav-k-'yuu
I s.t. 1-hurt-ss-see=ev 'I was sick'

the k in -k'yuu can tentatively be identified as the same subject suffix. In (26) which has the same verb, but a third person subject, the k is not present.

(26) Pam-sh 'ayuu rav-'yuu
Pam-sj s.t. hurt-see=ev 'Pam was sick'

In (27) and (28), which both contain -m-verbs, it does not matter what the subject is; as in the switch reference cases, these verbs cannot be marked with k.

(27) nyaa '-wii-'yuu
I 1-do-see=ev 'I did it'

(28) Pam-sh wii-'yuu
Pam-sj do-see=ev 'Pam did it'

Further support for the hypothesis that the k in this construction is the same subject suffix comes from the remainder of the sight evidential suffix. The sight evidential suffix itself consists of 'yuu which is transparently related to the verb yuu-k 'to see' with the first person prefix '-; this is compatible with the semantics since this affix means that the event took place within the sight of the speaker. In other words, the sight evidential includes the morphemes for 'I see'.

In complex sentences which have a sensory verb as their main verb and a clausal object , the verb of the complement clause is marked with a switch reference suffix, either same subject -k or different subject -m. In the following examples, this complex construction is shown with the sensory verb yuu-k 'see' with complement clauses which have the same subject (as in (29a)) and different subjects (as in (29b-c)).

(29a) '-iima-k '-yuu-k
1-dance-ss 1-see-asp 'I saw myself dance' (cf. (6))

(29b) m-iima-m '-yuu-k
2-dance-ds 1-see-asp 'I saw you dance' (cf. (4))

(29c) iima-m '-yuu-k
dance-ds 1-see-asp 'I saw him dance' (cf. (5))

If one compares (29a-c) to the parallel evidential-marked verbs in (6), (4) and (5), it is clear that the -k in the evidential form is associated with -k 'same subject' in the complex sentence, while Ø in the evidential form is associated with -m 'different subject' in the complex sentence). Similarly, with verbs which do not participate in switch reference, -m on the complement clause of the complex sentence is parrallel to Ø in the evidential marked forms. Compare (23a-c) with (30a-c):

(30a) '-kyaa-m '-yuu-k
1-shoot-m 1-see-asp 'I saw myself shoot him'

(30b) m-kyaa-m '-yuu-k
2-shoot-m 1-shoot-asp 'I saw you shoot him'

(30c) kyaa-m '-yuu-k
shoot-m 1-see-asp 'I saw him shoot him'

Thus, yuu-k 'see' is a verb which takes switch-reference marked complements. Complements of 'yuu 'I see' which themselves have first person subjects are obligatorily marked with -k (if the verb of the complement is a -k-verb). This supports the identification of the k in the sight evidential suffix with the same subject -k.

A parallel relationship can be traced for -k'a and 'a with respect to the verb 'av-k 'to hear, sense'. The distribution of the form with k and that without k is the same as described above for -k'yuu and -'yuu. Like yuu-k 'to see', 'av-k 'to hear' is a verb which takes a switch-reference marked object complement. 'av-k is somewhat more distant phonologically from its affixal counterpart 'a than the first person verb of 'seeing' is

from the sight evidential. There is no explicit first person '- prefix on the hearing evidential. This seems a very slight change given the general process for eliminating first person '- on consonant-initial verb stems in Maricopa. The loss of v is not particularly difficult to account for; many v's in final position are lost in many contexts.[8]

The evidential forms, unlike their complex counterparts, do not have as their main assertion that the speaker saw or heard something; instead, the main assertion is that made by the verb to which the evidential is affixed. The evidential marking sets the event in time and space with regard to the speaker.

The main semantic force of these affixes which speakers are immediately conscious of is that the clauses which contain evidentials assert something which truly happened in the past. (An evidential is not used on a verb to express an action or state which is presently going in within the sight or hearing of the speaker--that would presumably also be in the sight or hearing of the person the speaker is addressing). More than this, of course, these affixes reflect the actual sensory source of the information. These affixes have a kind of hierarchy for use--if an event is both seen and heard (probably the most commonplace situation), then the sight evidential is used; the hearing evidential is only used when the event is witnessed but not seen--the direct perceptual source of the information can be hearing, feeling or otherwise sensing (but not seeing).

Evidential marking may seem odd on first persent verbs, since, of course, any event one is a participant in, one is present at. However, we have already seen that it is possible to assert (without difficulty) that 'I' saw or otherwise sensed 'myself' do something (cf. (29a) and (30a)). The natural inference of these evidentials is that something truly happened in the past. With a first person subject, that aspect of the meaning is central (the form of the witnessing is less important as is the assumption of direct observation since they are part of the natural and predictable state of affairs). When the subject is first person, the use of -k'yuu, in particular, marks the assertion as more emphatically true and sets the event unambiguously in the past. Neutral realis marking as in (1-2, 15a-17b) does not imply that the action/state expressed by the verb is in the past. Compare (30a) and (30b):

(30a) nyaa 'ayuu '-rav-k
I s.t. 1-hurt-asp 'I am/was sick'

(30b) nyaa 'ayuu '-rav-k='=yuu
I s.t. 1-hurt-ss=1=see 'I was sick' (same as (25))

The verb marked with an evidential suffix can be negative--one can witness something not happening, as in

(31) waly-marsh-ma-'=yuu
neg-win+du-neg-1=see 'I was sick'

The evidential itself cannot be negated, since the evidential sense is presupposed not asserted. To assert that one did not witness something, an independent

main verb must be used, as in

(32) marsh-m waly-'-yuu-ma-k
win+du-ds neg-1-see-neg-asp 'I didn't see them win'

The source of these evdiential suffixes suggests a parallel source for -(k)sh 'perfective' and -(k)sha 'emphatic perfective' which demonstrate the same distributional pattern of k and ∅ as the evidential suffixes do. It was this pattern of distribution of k and ∅ which led to the identification of k in the evidential suffixes as the same subject -k (historically, at least). It seems likely that in the perfective suffixes as well k is historically the same subject suffix. This leaves morphemes which cannot be related to any independent verb. The perfective affixes, if they are related to independent verbs, are so reduced that no identification is possible. Note that as well as sharing the distribution of form with the evidentials, the perfectives also share the semantic feature of basically past time reference. Whatever the original verb was in the perfective constructions (or verbs were), all that is historically reconstructable of them now is that they must have had first person subjects (like the sensory verbs in the evidentials) to account for where the k's are found in the perfectives (only on -k-verbs with first person subjects).

An interesting outcome of this grammaticization is that it gives Maricopa a set of verbal forms in which first person subject is, in effect, marked by the shape of the suffix, rather than a pronomoninal prefix or in addition to a pronominal prefix. In four different, though related, aspect/moods, the presence of the k in the suffix identifies the verb as having a first person subject (though, of course, the absence of k does not suffice to mark the verb as not having a first person subject if the verb is an -m-verb). This process of marking first person subject with the presence of k in the evidential/perfective suffixes is happening concurrently with the loss of '- as a first person prefix.

Another grammaticized evidential construction is also derived from a complex sentence. The reportative construction in Maricopa consists of a form of the verb 'ii-m 'say', which is invariant and cliticized to the verb which precedes it; the hearing evidential suffix is attached to the verb 'say'. This form just like the sensory evidentials discussed above is used exclusively on independent clauses. The construction is used to indicate that the speaker is not vouching for the truth of the utterance, instead he or she is merely repeating something that has been said to him or her.

(33) Bonnie-sh chuy-k-'ish-'a
Bonnie-sj marry-k-say+sh-hr=ev '(They said, I heartell) Bonnie got married'

The identification of 'ish (alternatively, ish) as a form of the verb 'say' is not based on the phonological similarities between these two forms alone, since this verb has many forms and this form, 'ish, resembles a number of other morphemes ('ish 'unspecified object', sh plural/dual suffix, sh aspect/mood suffix, etc.). Morphosyntactic evidence exists which indicates that this construction contains the verb 'say' in it at some level. 'ii-m 'say', like the evidential verbs described above, is a verb which takes an object complement clause. Unlike the sensory verbs, however, 'say' takes a complement whose verb is not marked with switch reference suffixes.

Instead, verbs of complements of 'ii-m 'say' (if they are realis) are marked with the neutral realis suffixes -k or -m or with -k (which does not indicate same subject or ordinary aspect marking). Clearly, the -k does not indicate same subject in

(34) Bonnie-sh chuy-k uu'ish-k
Bonnie-sj marry-k say+pl-asp 'They said Bonnie got married'

since 'they', the subject of the 'say' verb, 'Bonnie', the subject of the complement clause, are not the same. Further evidence that this is not the same subject -k as noted above is that -m verbs (which never are marked with the same subject marker -k or the neutral aspect marker -k) can be marked with this -k, as in

(35) Pam-sh Bonnie tpuy-k uu'ish-k
Pam-sj Bonnie kill-k say+pl-asp 'They said that Pam killed Bonnie'

-m verbs in such complement clauses can also be marked with -m, as in

(36) Pam-sh Bonnie tpuy-m uu'ish-k
Pam-sj Bonnie kill-m say+pl-asp 'They said that Pam killed Bonnie'

-k verbs in such complement clauses can never be marked with -m (whether as different subject marker or as aspect marker). Compare (34) and

(37) *Bonnie-sh chuy-m uu'ish-k
Bonnie-sj marry-m say+pl-asp

(This is the only construction which shows variation between -m and -k which does not also demonstrate clear differences in syntactic organization or in which there is not great indeterminacy as to the subjects of the verbs involved.)

This variation between -k and -m is found on the verb followed by a reportative clitic. Compare the final suffixes on the lexical verbs in (38a) and (38b). They show parallel structure to (35) and (36) above, which are complex sentences with full-fledged 'say' verbs as the main verbs of the sentence.

(38a) Pam-sh Bonnie tpuy-k 'ish-'a
Pam-sj Bonnie kill-k say+sh-hr=ev 'Pam killed Bonnie (I hear tell)

(38b) Pam-sh Bonnie tpuy-m 'ish-'a
Pam-sj Bonnie kill-m say+sh-hr=ev 'Pam killed Bonnie (I hear tell)'

Both the sensory evidential suffixes and the hearsay construction are still quite transparent in their internal structure and both are clearly derived historically from complex sources. In both cases an original main verb has been reduced to suffixes or clitics. Both constructions demonstrate parallel development from complex sentences containing two clauses to simple sentences in which the main verb/clause has been reduced to being part of the verbal complex (of the earlier complement clause). Both constructions illustrate the use of productive systematic morphology which has to some extent become fixed, producing a new form which does not participate in the general syntactic or morphological system. This grammatical fixing of these constructions

Has produced simple sentence from complex sentences; simultaneously it has complicated the grammar by introducing new morphosyntactic categories.

Footnotes

[1]Maricopa is a Yuman langauge of the River branch, most closely related to Mojave and Yuma. The data and anaysis presented in this paper comes from Gordon 1980a. The data is presented in practical orthography: VV = V:; ch = $\check{c}$; sh = $\check{s}$; d = $\eth$; ny = n^y; ky = k^y; ly = l^y; ' = ?; h = x; kw = k^w. The abbreviations used in this paper are: 1 =first person; 2 = second person; 3 = third perwon; 1/2 =first person subject/second person object, etc; asp = nutral realis aspect; dem = demonstrative; du = dual; ds = different subject suffix; hr=ev =non-sight sensory evidential; neg = negative; intns = intensifier; pl = plural; see=ev = sight evidential; sj = subject; ss = same subject suffix; s.t. = something (unspecified argument); inc = incompletive.

I am gratefull to my Maricopa teachers Pollyanna Heath and Jasper Donahue, for their patience and skill. Most of the data included in this paper is from Ms. Heath. I have discussed these data at different times with Pamela Munro, Margaret Langdon, Sandra Thompson, Bonnie Glover, and Heather Hardy and I would like to thank them for their interest and suggestions.

[2]Aspect and mood are primarily marked by final suffixes on the verb of an independent clause. More complex moods and aspects are expressed using auxiliary constructions and complex sentences. Inferential constructions include the enclitic shaa and several main and auxiliary verb constructions. The enclitic shaa indicates that the sentence to which it is affixed is the belief, inference or expectation of the speaker. It cliticized to the final verb of the main clause of a sentence which is marked with either realis -k or -m or incompletive -uum (cf. Gordon 1980).

Other inferential constructions use the sensory verbs yuu 'see' and 'av 'hear, sense' to indicate the perceptual source of the information on which the speaker bases his or her inference. Another set of inferential construction uses the existential verbs duu 'be', wii 'do', and 'ii 'say'. These verbs are used to express how the event on which the speaker's inference is based is manifested.

[3]The first person subject (intransitive and transitive with a third person object) prefix '- is obligatory for most speakers only with vowel initial and glide initial stems. With consonant initial stems, '- is obligatory; thus, the unmarked form is ambiguous between third person subject and first person subject.

[4]The -k on the verb of the complement is discussed later in the paper. The verb 'ii-m 'say' varies greatly in form--the vowel can be long or short; under certain circumstances the vowel can be lowered and shortened; the initial ' is optional when no prefix precedes it (all this is discussed in detail in Gordon 1980). This accounts for the difference in form between the two instances of 'say' in this example.

[5]Note that in (15b) the verb hot 'good' is a -k verb, while in (17) the suffix -hot- (which is transparently derived from the independent verb) takes -m as its final aspect marker.

[6]This is clearly not a phonologically based distribution, since it is possible to find pairs of homophonous stems which differ only in the assignment of final realis marker. Such pairs include:

chaa-m	'put'	chaa-k	'read, count'
shmaa-m	'sleep'	shmaa-k	'dream'
waa-m	'do to someone'	waa-k	'drive'
chem-m	'put'	chem-k	'make a mistake'

Other possible criteria for the assignment of -k or -m also fail--even verbs which are derived from nouns (using the same morphology) may fall into different classes, e.g.

hay-m 'damp' (from ha 'water') mathay-k 'windy' (from matha 'wind')

[7]Switch reference suffixes are used on verbs in all kinds of dependent clauses--complement clauses, adverbial clauses (temporal, causal, etc.), and certain modifying clauses. Switch reference marking is never used together with case marking.

[8]The v usually lost is the medio-passive suffix. As pointed out by Munro (1980, to appear), it seems that 'hear' in the Yuman langauges is the medio-passive form of 'say'; in Maricopa, the transitive vorm of 'say' is 'aa-m and the medio-passive form 'a(a)v would be identical the 'av 'hear, sense'.

TWO NOTES ON YUMAN 'SAY'[1]

Pamela Munro

University of California, Los Angeles

I. The Relationship Between Yuman 'say' and 'hear'

In Munro (1980) I suggested an etymological connection between the Proto-Yuman verbs 'say' and 'hear'. I believe that 'hear' is (historically) the "passive" (in the sense in which Langdon (1970) and others have used this term of verbal derivatives in -v/p) of 'say'. In this note I will present evidence for this relationship from a number of different levels of linguistic structure.

First let us consider the forms of 'say' and 'hear' in the modern Yuman languages:[2]

	'say'	'hear'
Kiliwa (Mixco)	?i:	kwi:
So. Diegueno (Langdon)	i?i:	i?ip
No. Diegueno (Langdon)	-i:	-yip
Cocopa (J. M. Crawford)	?i	?i:?i:p
Yuma (Halpern)	a?i/a?e	a?av
Maricopa (Gordon)	?i:/?e/i etc.	?av
Mojave (Munro)	i?i:/e?e/i/e etc.	?av
Paipai (Joel)	-?i-	(-)?e:v-
Tolkapaya Yavapai (Hardy)	?i	?ev-
Hualapai (Redden, Yamamoto, Lieber)	i(?)(-)	ev(-)
Havasupai (Kozlowski)	i	e:v

I see no reason to suppose that Kiliwa kwi: 'hear' is related to the other words in the second column above. Aside from this, however, the cognate sets presented suggest a number of generalizations about the shape of these words in the proto-language.

The only languages which show no root-initial glottal stop in both 'say' and 'hear' are Northern Diegueno and Hualapai/Havasupai. The presence of ? in languages closely related to these, like Southern Diegueno and Yavapai, supports the notion that the omission of these root-initial ?'s was an innovation. Reconstruction of root-initial glottal stops in these words seems secure. However, it is worth noting that sporadic omission of this reconstructed ? (probably only in the verb 'say') may have been a morphologically conditioned option in Proto-Yuman. Notice, for instance, the 'say' alternants without ? in the closely related River languages Maricopa and Mojave. In Maricoa this alternation is morphologically conditioned -- if 'say' has any prefix, it must have a ?-initial root (Gordon 1980). In Mojave, however, 'say' forms both with and without ? are found after all the

personal prefixes, but the shorter forms without ? are preferred in certain morphosyntactic contexts (Munro 1976a). Other languages may also have certain forms of 'say' without the root-initial ?: for instance, in Tolkapaya Yavapai the ? in 'say' is omitted after the second-person subject prefix m$_3$ (though not after the homophonous second-person object prefix!):

(1a) m-i(-k=m=i=m) (2-say(-inc)) 'You say it'
(1b) m-'i(-k=-'i=m) (3/2-say(-inc)) 'He says it to you'

Along with the initial glottal stops in both roots, we may securely reconstruct a final *p in the root for 'hear'. The distribution of p's and v's in the forms above follows the regular correspondences for poststress *p (Langdon and Munro 1980).

As is usual in Yuman, the vowels are the most problematic elements in these reconstructions. In general, a reconstruction of *i: in 'say' and *i in 'hear' seems justified. However, note the unexpected vowels in the River 'hear' forms.

My claim is that the 'hear' verbs in the table are derived from the corresponding 'say' verbs by suffixation of the -v/p "passive" suffix (Proto-Yuman *p). The length disparity between the vowwels of the two verbs could be attributed either to a lengthening of the root-final vowel in 'say' or a shortening of this long vowel before the suffix in 'hear'. Given that similar stem vowel alternations have been reported in various morphophonological circumstances in the modern daughter languages (cf. e.g. Langdon 1970 on the lengthening of stem-final vowels in plural forms, and Gordon 1980 on the shortening of root-final vowels before certain suffixes) it does not seem unlikely that such alternations would be found in the proto-language.

Now let us consider the semantic consequences of such a claim about morphology. Suppose we assume a situation which a speaker might describe in the following way:

(2) A says "Kamaduu" (Mojave 'hello') to B

One possible "passive" of (2) would be

(3) B is said "Kamaduu" to (by A)

And a sensible consequence of (3) is

(4) B hears "Kamaduu"

Thus, it does seem that 'hear' is in a sense a passive of 'say'. One objection to this, however, might be this: since 'hear' can take an object, how can it be a passive? Actually, 'hear' can take two types of objects (in English at least), a quotation, as in (4), or some source of sound, corresponding to the speaker A in (2). The quotation "object" (see part II below) is no problem, since 'say' sentences like (2) also start out with two objects, a quotation and an indirect object (like B in (2)). When the indirect object is passivized upon, the

quotation remains behind in the syntactic object position -- just like the "old" object in an English sentence like

(5) Mary was given the book (by her grandmother).

Analogically, if the phrase was given in this sentence was reinterpreed as a nonpassive basic verb, the book would be taken as an object. Why the subject of 'say' should occur as an object in a 'hear' sentence, however, is more of a problem, since Yuman passive constructions typically do not allow even the oblique expression of an agent. However, I think that 'hear' is much less perfectly transitive a verb in the Yuman languages I know than it is in English. Consider the following examples from Mojave:

(6a) hatchoq-ny '-a'av-k (dog-dem 1-hear-tns)
'I heard the dog'
(6b) hatchoq-ny-ch uwoh-m '-a'av-k (dog-dem-su bark-ds 1-hear-tns)
'I heard the dog bark'

Mojave speakers have told me that (6b) is a better way to express the idea in (6a). At least in Mojave, 'hear' prefers not to take an animate (noise-making) object, but prefers to have that object expressed in an associated switch-reference-marked clause.

At this point let's return to the question of the a's in the River words for 'hear'. In most of the Yuman languages, 'hear' is formed by the suffixation of -v/p directly to the normal 'say' verb. In River, however, 'hear' is the "passive" of 'say to', a verb first noted (for Maricopa) by Lynn Gordon. While 'say' can take a marked indirect object in most languages, as (1b) above shows, River sentences with marked (non-third-person) indirect objects often show a replacement of the normal 'say' stem listed in the table above with the 'say to' stem (Maricopa 'aa, Mojave a'aa), as in these Mojave examples:

(7a) 'inyep 'ny-i'ii-m (me 3/1-say-tns)
'He said it to me'
(7b) 'inyep 'ny-a'aa-m (me 3/1-say=to-tns)
'He said it to me' (better?)

(In Maricopa, according to Gordon (1980), the requirement that 'aa replace 'say' when an indirect object is marked on the verb seems to be stronger than in Mojave.) Notice incidentally the meaning of a non-third person associated with a 'say' verb showing no indirect object agreement:[4]

(8) 'inyep i'ii-m (me say-tns)
'He said it about me'

I have not seen this 'say to' verb reported for Yuma (the third language of the River branch) or for any other Yuman language. Perhaps it was an innovation in River, where qualitative ablaut frequently marks various sorts of derivational processes (Langdon 1976). In any

case, where this verb was available it makes sense that it would have been used as the source for the passive whose history is suggested in (2)-(4) above, since the presence of the indirect object in the original 'say' sentence is crucial.

Another point concerning the final consonant in 'hear' has to do with a common rule by which stem-final v's are deleted before labials in such languages as Mojave (Munro 1976a) and Maricopa (Gordon 1980). One of the best examples of this process in Mojave is the verb 'hear', which, along with other verbs, seems to show compensatory lengthening when this deletion occurs, as in

(9) '-a'aa-mpotch (1-hear-neg+perf) 'I didn't hear it'

Gordon (1980) has noted that in Maricopa the only stem-final v's which delete in this environment are those of -v passives and the verb 'hear', and the same seems to be true in Mojave. If all these verbs belonged to the same group (e.g. -v passives), this generalization would be neater. The "compensatory lengthening" referred to above might involve simply a reversion to the original shape of the verb before suffixation of the "passive" ending.

There is one more similarity between 'say' and 'hear' which may support the historical connection being proposed. As is well-known among Yumanists (and noted in part in most grammars and many shorter papers), 'say' is an extremely common auxiliary verb in Yuman, both in various idiosyncratic constructions, or patterning with the "exitential" (Munro 1976b) or "behavioral" (Langdon 1978) auxiliaries 'be' and 'do'. 'Say' sometimes conveys the idea of 'manifest' (I believe this gloss is due to Kendall and Shaterian), while 'hear' may be used to mean something like 'experience' -- again two notions which are sort of opposites, or passives of each other. In this 'experience' sense 'hear' appears in such auxiliary constructions as the periphrastic expression of 'never' in Mojave:

(10) hayiko-ly '-iyem-k '-a'aa-mot-m (white=man-in 1-go-ss 1-hear-neg-tns) 'I never go to town'[5]

Thus it seems reasonable to suppose not only that the Yuman verbs for 'say' and 'hear' are related, but also that 'hear' is a historically a v-passive derived from some 'say' verb.

II. -k on the Quotation Complements of 'say'[6]

Yumanists have long been puzzled by the fact (noted first by Sandra Chung for Tolkapaya Yavapai -- cf. also Kendall 1975) that quotation complements of the verb 'say' (and, in some languages, of verbs derived from 'say', like 'think') do not show normal switch-reference marking. In this note, I will suggest a new explanation for the puzzling use of -k on complements of 'say' in these languages.

Consider a sentence like the Mojave example

(11) m-isay-k '-i'ii-m (2-fat-? 1-say-tns)
'I say you're fat' OR 'I say, "You're fat"'

The use of -k on the apparently subordinate verb isay 'fat' in (11) contrasts with the well-known same-subject marking function of -k in a sentence like

(12) m-isay-k m-suupaw-m (2-fat-ss 2-know-tns)
'You know you're fat'

Here, the subjects of both clauses are the same, so same-subject -k appropriately appears on the first (subordinate) verb. But the subjects of the two clauses in (11) are different, so there is no reason to expect the use of -k. Another explanation might be that the quotation in (11) is syntactically direct, since the nornal way to say simply 'You're fat' in Mojave is m-isay-k -- thus, one might argue, the use of -k on the first verb in (11) mimics the use of -k on the corresponding independent clause.

There seem to be two cross-linguistic problems with this suggestion. First, in Tolkapaya Yavapai -k may freely occur on 'say' complements, but no independent clauses are ever marked with -k (Hardy 1979):

(13) m-'ev-k 'i-k='i=m (2-hear-? say-inc) 'He says you heard it'
(14) m-'ev-i / m-'ev-k=m=yu=m / *m-'ev-k (2-hear-inc)
'You heard it'

Secondly, in Maricopa there are two classes of verbs -- -k verbs, which are subject to normal switch-reference marking and take -k as their neutral aspect marker, and -m verbs, which do not participate in the switch-reference system (remaining marked with -m even in a same-subject environment) and take -m as their neutral aspect marker (Gordon 1980). Even Maricopa -m verbs, however, can take a -k suffix in a 'say' complement:

(15) m-maa-k/m 'ii-m (2-eat-?/asp say-asp) 'He says you ate it'
(16) m-maa-m / *m-maa-k (2-eat-asp) 'You ate it'

Note that either the "direct quotation"[7]-m or the special 'say' complement-marking -k we are discussing here is appropriate for Maricopa -m verbs in a quotation complement like (15). This prompts Gordon (1980) to note that in the Maricopa equivalent of a sentence like Mojave (11), (17), where -k appears on a -k verb complement, the -k must be subject to two analyses, either as "direct" aspectual marker or as complement-marker:

(17) m-shaay-k 'ii-m (2-fat-?/asp say-asp) 'He says you're fat'
(18) m-shaay-k 'You're fat'

It is indeed hard to explain why the same-subject -k of the

switch-reference system would occur in the environments exemplified above, and the Maricopa data suggests strongly that the 'say' complement -k cannot be the same-subject marking -k, even with an intricate extension of the description of the use of same-subject -k or a suspension of the rules for its use, as earlier investigators (Kendall 1975, Munro 1976b) have suggested. If, though, the -k on 'say' complements is not same-subject -k, what is it?

The oblique non-quotation object in a Mojave sentence like (8) above can also be explicitly case-marked, as in

(8') 'inyep-k i'ii-m (me-obl say-tns) 'He said it about me'

The Mojave case-marker -k is sometimes used to mark involved but not particularly affected participants, as in (8'). It seems clear that 'me' is not an indirect object of 'say' (in that case, we would certainly expect a first-person object prefix on the verb, and the translation would be different), but it does not really appear to be a direct object either. When no indirect object is present, a non-third-person direct object should always trigger verbal agresment in Mojave (Munro 1976a). The status of 'me' in (8') seems clearly to be "oblique", comparable to that of the inanimate noun marked with -k in a sentence like

(19) 'amat-k '-chanaly-k (ground-obl 1-drop-tns)
'I dropped it on the ground'

Although the exact semantics of the reconstructable Proto-Yuman case marker *-k[8] is still unclear, some oblique relational meaning like those used in present-day Mojave is doubtless appropriate. It seems likely to me that the use of -k to mark the topic of conversation in (8') was grammaticized during the evolution of Proto-(Northern?)-Yuman and extended to the surprising use of -k on full complement clauses seen in the Mojave, Maricopa, and Tolkapaya examples above. Gordon (1980) suggests an additional piece of Maricopa data in support of this analysis. She notes that while most -m verbs may appear with -k in 'say' complements like (16), imperatives of -m verbs may not be marked with -k:

(20) k-maa-m/*k 'ii-m (imp-eat-asp/*?=obl say-asp)
'He said to eat it' / 'He said, "Eat it"'

As Gordon points out, the failure of "speech act morphology" like the imperative prefix k- to occur in a -k-marked 'say' complement is consistent with the general (cross-linguistic) reluctance of such syntactic apparatus to occur in any embedded or nominalized clause -- and by the analysis presented here, the case-marker -k is an explicit marker of the nominal, non-main-clause status of the quotation complements it marks.[9]

Thus, in these Yuman languages at least the quotation complement of 'say' is marked not like a direct objeect (the syntactic role assigned to complements of 'say' in some traditional analyses of

various languages) but rather explicitly as an oblique.[10] This finding is consistent with data from a variety of unrelated languages which show in different ways that 'say' must often be analyzed as intransitive -- thus, 'say' may often take an indirect object but not a direct object (cf. Munro to appear).

Footnotes

1. This paper owes a lot to Lynn Gordon, both for the suggestive analyses of Maricopa she presents in her dissertation, Gordon (1980), which have greatly clarified and inspired my own thinking on many matters, and for uncounted helpful conversations. I'm also grateful to Charles Ulrich and Allen Munro for listening to various of these ideas at times.

I must also thank my teachers, Nellie Brown (Mojave), Molly Fasthorse (Tolkapaya Yavapai), and Pollyanna Heath (Maricopa), who provided all the sentential data herein (although, of course, my understanding of the Tolkapaya and Maricopa facts draws heavily upon the work of Hardy 1979 and Gordon 1980).

2. Most of the data here comes from 100 wordlists kindly provided by the Yumanists noted for a comparative lexical project conducted by Robert Oswalt and myself reported on at an earlier meeting of this group. The data from Gordon and Hardy, however, was provided later. Hyphens in the table indicate my omission of "tense" and other suffixes and of demonstrative prefixes.

Tom and Carol Nevers provided the following additional Cocopa forms: i 'I say' and ee?eep 'I hear'.

3. I believe this observation to be the somewhat collective observation of Heather Hardy, Lynn Gordon, Bonnie Glover, and myself, but it probably also appears somewhere in Hardy (1979).

This Tolkapaya data, like all remaining data in this paper, is presented in practical orthography.

4. In all Yuman languages verbs agree with an indirect object even if a direct object is present.

5. Consider also the English I'd never hear of going to town.

6. Most of the arguments in this sections appear in abbreviatead form in Munro (to appear).

7. I use the term "direct quotation" here quite injudiciously. I believe that the principal consequence of the direct/indirect quotation distinction is in pronominal useage -- if the use of pronouns is "transparent" (i.e. assigned according to the speaker's real-world knowledge and orientation), the quotation is "indrect" (e.g. He said (that) I should go), but if the use of pronouns is "opaque" (assigned according to the knowledge and orientation of the subject of 'say'), the quotation is "direct" (e.g. He said, "You should go"). This variation in the use of pronouns seems to be the only consistent test for direct-indirect quotation cross-linguistically. However, in English grammar the distinction is more often taken to refer to the (possible) appearance of the complementizer that and the use of quotation marks, and that is the sense in which I use the term loosely

here.

8. Margaret Langdon (personal communications) has justified the reconstruction of the Yuman case markers.

9. Incidentally, imperative k- may occur on switch-reference marked clauses in Maricopa (for instance, when one imperative is linked to another by switch-reference), as Gordon (1980) has noted.

10. I am not sure how many other Yuman languages besides those noted here use a -k suffix to mark quotation complements. This would be interesting to learn.

Some Notes on Hokan Person Terms

Nancy M. Webb

University of California, Davis

I. In this article some evidence will be presented describing another homogeneous semantic domain shared by many of the posited Hokan languages. In an earlier paper[1] I discussed the "plant/tree" domain to some extent. Here will be considered what might be called a "person term" category. This includes kin terms and more general relationship designations with the glosses such as "man, woman, spouse, person and body".

The object in presenting all this is simply to further attest to and illustrate the relatedness of these many families of languages of the first order and isolates that have for many years been posited as belonging in some degree to one superfamily, the Hokan superfamily. These relationships will be shown both phonologically and semantically from which can be inferred degrees of inherent affinity both lexical and cultural.

II. The evidence[2] presented is in the form of phonologically determined cognate lexeme sets. In these sets the regularly recurring consonant phonemes are designated cognate. The etymon determined as phonologically cognate in each set in each language is, however, not necessarily semantically cognate with those others in the set. They are, never the less, all closely related and represent logical semantic interchanges or substitutions. These semantic shifts show some interesting patterns that in themselves suggest degrees of affinity among daughter languages.

The several lexeme sets on which this study is based are from a larger corpus of approximately 190 sets each of which is at least one half complete for 15 languages of the first order or their equivalent representing 29 synchronic languages. Most sets are almost complete or complete. These are part of a master corpus of about 300 glosses, variously complete.

Lexical sets glossed "father's sister, father's brother, husband, older sister, daughter, father's sister" are omitted from the following display but examples from each are included. This is not an exhaustive study of the domain for some fragmentary sets are not included here.[3]

	#1 'father'	#2	'father's mother'
Karok	?at i š	?a kah	
Shasta	?at·á	kariwa (bro)	?am mu mam·u
Chim.		magolai? (fa's bro)	?imo
P Pal.	t ata (ac.)	k'es ke· (bro. y.)	- mun
P Pomo		čEk'i (fas bro)	mamac'
Yana		cigalsi	?amawi
Washoe	?at u (bro)	gó?y	?ama?
Esselen	t a (uncle)	qoqo	?amāma (great great)
Salinen	t atā	ek'	
Chumash	t a (mo's fa bro)	koko	ama ka' Sapir
P Yuma	-t á	-k-	n amaa
Seri		kaš (bro y.)	?ima s
Teq.	t ata		nanawela
Sub.			
P Jiq.		ekä (fa's bro)	may (mother) mimiy

	'mother' #1	'sister, younger'	'mother' #2
Karok	t á·t	či· š	
Shasta	?at xa/i?	?á·ccuk^{w}i	?annit
Chim.		-sai (in gen.)	
P Pal.	t a tī (Ac.)	S eq (mo's sis)	n e h (Ac.)
P Pomo	?aht^{h}E·	-iSi- š ek i (" ")	n í k'- (Pe·)
		k'a ci (daughter)	
Yana	?sdi (fa's sis)	s ek (mo's sis)	n ina
Washoe	t lá·?	-c'ug	
Esselen		me č·ix (aunt)	n ené? (mo's parent)
		is	
Salinen	t on (sis v.)	s a?au (girl)	n ené? (grand mo)
Chumash	t ete	š a?y (daughter)	-n?i
P Yuma	t á·	kí-	-ńi
Seri	it a	?i sáak	?in-
Teq.	-tomi	-s'a- (sis old.)	n en
Sub.	u·tu·	s ekā	
P Jiq.			

	#1 'man'	#2
Karok	?i p (deer)	
Shasta	? ú p si (meat)	?awa tík^{w} a
Chim.		
P Pal.	a pa ya (Ac.)	qe Swaew
P Pomo	hi? ba ya	? aka· (old man)
Yana	ya· (person)	k'u-di nasi·wi (old men)
Washoe	áp š (body)	t'anu (person)
Esselen	epexe (person)	ex enuc/č
Salinen	iu pe lo	t a má?
Chumash	iy'a	paku waš (old man)
P Yuma	? apá·	? ak (" ")
Seri	? p xa (person)	k t a m
	yal (spouse)	
	?ihi y	
Teq.		aku we
Sub.	i/abu	ax n^{y} (old)
P Jiq.	pa (father)	t ol (people)
	yom	

	#1 'woman/female'	#2
Karok	ik távan	?a r á ra (person)
Shasta		t a ríc'i?
Chim.		pu n-c'i
P Pal.		ami tē·w j en
P Pomo	?ak á·k (old man)	?imá ta (wife)
Yana		-pu d'
Washoe		t'a nu (person)
Esselen		t a nuč
Salinen	k'we L (person)	letse n$_{y}$
Chumash	-k u'- (person)	se n^{y} (wife)
P Yuma	?ak	n^{y} ave (wife)
Seri	kwá· m	ipxa (person)
Tex.	ak a ǹo	p é n o (wife)
Sub.	-gu-	
P Jiq.	k ep	t ol/r (people)
	kw ay	

	#1 'boy/child'	#2 'brother, older'
Karok	axi·č a	k wan t ipah
Shasta	s u kʷa	?umé· apo
Chim.	ic ila	x már
	x már	
P Pal.	kəswe j an	kə·swi jan wa pa wi / yau (younger)
P Pomo	g uc'i (small)	ga wi ma·ṭ'i (younger)
Yana	ix z annuipa	ṭ'i yau (")
Washoe	ŋá ' min	-á ' min ?a tu
	mehu	-pe yu
Esselen	ehi	x ep na (younger)
Salinen	stexá	?i to l
	as	-ape·u
Chumash	č'i wun	c'iwun -pe-
P Yuma	wa -š nu (Cochimi)	x mar (baby) pi·- (bro's child)
Seri	s a·k (son)	?i pak (older sis)
Teq.	-a·k, wa	-k wa bima
Sub.	se kú	
P Jiq	ɬh kway (girl)	wea t am

	'mother's father'	'father's father'
Karok	xu kam (mo's bro)	kú·t
Shasta	ma c mu	ma kʷit
Chim.	xa wel	
P Pal.	wapu'- (At.)	aQun
P Pomo	ma c'i	
	maba c' (fa's fa)	
Yana	ma h z u (fa's fa)	
Washoe	s á-	gu?u
Esselen	ma -xay (fa's bro)	
Salinen	xa lá'	
Chumash	xax (large)	
P Yuma	napo	-akʷó·w
Seri	?ipa s	
	? ixá· k (fa's fa)	
Teq.	epa s welo	
Sub.	axmba	
P Jiq		kokoy

	'mother's mother'	'deer/meat'
Karok	kí·t	?i·s (body)
Shasta	? ma cc	?i š (person)
Chim.	ma s o la (daughter)	?i c'i (man)
P Pal.	aQu n (fa's fa)	ī s (person)
	a j uwɜ	ši?ba (flesh)
P Pomo	ga· c'	bah ši
Yana	?a z awi	?ihsi (man)
Washoe	gu ? u	ap š (body)
Esselen	s o le (daughter)	y si (")
Salinen	an u e	se po (doe)
	s e el (girls)	
Chumash	in ku s	šiw (elk)
P Puma	nak- w	
Seri	?i k t	si
Teq.		isi
Sub.		isu (body)
P Jic.	ku s (daughter)	p is
		p' is

'father's sister' -m-and -p- as in Shasta /?ampax/
'father's brother' -p- as in Karok /parah/
-s- and -k- as in P Pomo /c'eki/
'husband' -w- and -s- as in Salinen /?avasa/
'sister, older' -t- and -s- as in Washoe /t'i·sa/
'daughter' **s- and **k- as in Salinen /sukumku/.

III. The minimum basic element shape seems to be of the CV(V) type This for both root and affix. Within each set the form or word that is shown for each language, whether it be a single syllable of the CV(V) shape or a compound of syllables, contains at least one basic element or root that is common to all others in the set. Roots can stand alone as in /ya·/ 'person' Yana, /tata/ 'father' Tequistlec, Salinen, Proto Palaihnihan; be compounded with other basic elements /?ataxa/ 'mother' Shasta, /?sda/ 'father's sister' Yana or be compounds of roots and various inflections, /k'u?naap'diwic'gi/ 'old women' Yana (i.e. old man, woman, plural, diminutive plural). Each set seems to carry one root constituent common to most of the languages therein and of these languages at least one of them carries this plus another root which links the remaining members. This can be seen in the set 'mother's mother'. The element -kV- is basic to most etyma; Chumash and Proto Pomo include also a -sV (vowel lost) root constituent which in turn links the Yana, Chimariko and Proto Plaihnahan word into the set.

The root constituents for person terms which emerge from this assembled data can be listed as follows. The gloss or glosses generally associated with each accompanies each.

-pV- 'man, male, person, older brother'; sometimes in 'male grandparent, woman, wife' and also in 'deer, meat'. This then, is a 'man' as an individual and as mankind element. The use in 'deer, meat' suggests the respect with which the animal was regarded.

-tV- 'mother, father, woman, wife'; sometimes in 'sister, younger brother'. This generally female constituent appears not to occur in the grandparent or child generations.

-kV-, -gV-, -qV- These elements appear in all categories except the 'mother's father, father's mother' sets and only rarely in the 'husband, mother's brother' ones.

-sV-, -c/cV- These, as the palatal obstruents noted above, are pervasive in all categories with the exception of, again, the 'mother's father and father's mother' terms.

-h/xV- 'boy, child, mother's father' and sometimes in 'man, person'. This, then, is another 'male/mankind' constituent.

-nV- 'mother, wife' and rarely in 'boy and uncle'.

-mV-, -wV- 'mother's father, father's mother, old person, boy, child.

-yV- 'man, person' in Proto Palaihnihan, Yana, Washoe and Proto Jicaque (Tol); 'brother' in Proto Palaihnihan, Yana and Washoe; and 'daughter' in Karok and Shasta. This is an element of very limited occurrence and represents an old borrowing?

These elements along with -h/xV- are the grandparent of the opposite sex from egos parents and their grandchildren roots.

The consonant used here is of a tentative form and suggests a probable shape of a Proto Hokan hypothesized consonant or group of similar consonants (as a voiceless bilabial stop, plain, aspirated or glottalized). Not all of the constituents included in the lexeme of a given language in the data are necessarily a root element denoting kinship or a person but may be a syntactic marker or a root denoting some other notion such as 'age' or 'body' human or in animal in general. This is seen in the sets for 'man, person' which overlap broadly with 'deer, meat'. It is for this reason that the latter is included for comparison.

The semantic generalizations made above are quite broad but are easily suggested by this evidence. The tenaciousness of retention of kin terminology is well attested by all these languages and serves to illustrate again the unity of these members of the posited Hokan group. This evidence from another semantic domain increases the conviction that a Hokan superfamily as a linguistic unit including all these 15 families is not in doubt.

Notes.

1. see Webb, N. M. 1979.

2. The data sources are: P. Pal.: D. L. Olmsted, 1964, "A History of Palaihnihan Phonology", UCPL 35. "Achumawi Dictionary", 1966, UCPL 45. "Atsugewi Dictionary", ms. P. Pomo: N. M. Webb, 1971, "A Statement of Some Phonological Correspondences Among the Pomo Languages", IJAL 37:3 pt II. Shasta: W. L. Bright and D. L. Olmsted, 1959, "A Shasta vocabulary", Kroeber Anthro. Paps. 20. Chim.: R. B. Dixon, 1907, "The Chimariko Indians and Language", UCPAAE 5: 293-380. Karok: W. L. Bright. 1957. "The Karok Language", UCPL 13:1-457. Yana: E. Sapir and M. Swadesh. M. R. Haas, ed., 1960, "Yana Vocabulary", UCPL 22. Washoe: W. H. Jacobson, Jr., 1964, "A Grammar of the Washoe Language", unpub. diss. Salinen: J. A. Mason, 1918, "The Language of the Salinen Indians", UCPAAE 14. R. F. Heizer, ed. 1952. "California Indian Records. Mission Indian Vocabularies of A. Pinart", Anthro. Recs., 15:1. Ibid, "The Mission Indian Vocabularies of H. W. Henshaw", 1955. Chum.: M. S. Beeler, 1970, "Topics in Barbareño Chumash", ms. P. Yuman: A. C. Wares, 1968. "A Comparative Study of Yuman Consonantism", Mouton. The Hague. A. L. Halpern, 1946-7, "Yuma I., II., III., IJAL 12 and 13. Seri: E. and M. Moser, 1961, "Vocabulario Seri. Vocabularios Indigenas", 5. Inst. Ling. de Verano, Mexico, D. F. Teq. D. L. Olmsted, card file of Tequistlatec. P. and S. Turner, 1971,

"Dictionary: Chontal to Spanish-English, Spanish to Chontal". Univ. Ariz. Press, Tucson. Sub: L. Campbell, 1975, "Subtiaba 1974", IJAL 41:80-5. E. Sapir, 1925, "The Hokan Affinity of Subtiaba in Nicaragua", AA. n.s. 27:402-35. P Jic: L. Campbell and D. Oltrogge, 1980, "Proto Tol (Jicaque), IJAL 46: 3,205-23.

3. abbreviations used are: Chim., Chimariko; P Pal., Proto Palaihnihan; Teq., Tequistletec; Sub., Subtiaba; P Jic., Proto Tol (Jicaque).

Kathryn Klar
Proto-Chumash Person and Number Markers
University of California, Berkeley

By necessity, those who deal with Chumash linguistics must do so as philologists; there are no living Chumash speakers. Perhaps partly because of this, Chumash data are too rarely available for comparison with other languages although the family continues steadfastly to be grouped with other Hokan languages, possibly for lack of anywhere else to put it in the absence of good and substantial data being available. I hope this paper will do a little bit toward remedying the situation. I will present some facts of Chumash grammar and suggest a working hypothesis to explain them. These, when compared with data from other Hokan languages (I think particularly of Margaret Langdon's paper on "Seri and Yuman" elsewhere in this volume) may suggest something about the position of Chumash within or without Hokan.

Chumash, along with Yuman and Pomoan, are the great "families" of languages grouped under the Hokan label. Chumash as we know it historically consists of six distinct linguistic groups usually called dialects--Obispeño, Cruzeño, Barbareño, Ineseño, Ventureño, and Purisimeño. In fact the family actually consists of three languages, one of which (Central Chumash) is characterized by a division into four dialects, namely Barbareño, Ineseño, Ventureño, and Purisimeño. Obispeño stands alone as Northern Chumash.[1] Cruzeño along with its sub-dialect Roseño constitute Island Chumash. The three language groups were not mutually intelligible. What little we know about Central Chumash dialectology suggests mutual intelligibility of the four dialects, though speakers recognized distinct "accents" and substantial grammatical differences are apparent. Two of the **Central** languages have sub-dialects: Emigdiano for Barbareño; Alliklik for Ventureño. Island Chumash is a far more unified idiom that Central Chumash. It appears that differences between Cruzeño and Roseño were slight (though it is possible that fuller attestations of these idioms might suggest more divergence). For Northern Chumash there are hints in the corpus that there were sub-dialects and that Obispeño was not an isolate. As with Island Chumash, the corpus is so small that such indications are very tantalizing but very hard to document. I believe that some of the problems Chumash scholars have encountered with "irregular" or "exceptional" sound correspondences may be due to the last Northern Chumash speaker reporting forms in two dialects. It is a problem I will continue to investigate.

Ten years of work by Madison Beeler, Richard Applegate and myself have revealed a family whose internal relationships are both more complex and more certain than was previously thought. There is no doubt, for instance, that Obispeño is an integral member of the family, though it comprises a distinct branch of the family tree.

Close affinities with Purisimeño, which led to occasional suggestions of a special relationship between that dialect and Obispeño, are due to close cultural contact in an otherwise isolated geographical setting. Deep structural similarities shared by Obispeño and Purisimeño are also shared in common with other Chumash dialects and are a fact of family relationship. The position of Island Chumash in relation to other family members has also become somewhat clearer. It has been generally assumed (on little evidence) that Cruzeño was more similar to Central Chumash--particularly to Ventureño--than to Northern Chumash, and that Island and Central Chumash formed a higher sub-grouping, set against the isolated Northern Chumash.[2] In lexical matters this appears to be the case for Cruzeño, but in matters of structure, a different picture is emerging. Island Chumash may in fact constitute an entirely separate branch of the family, as distinct from Central Chumash as is Northern Chumash. Extensive contact in fairly recent times between the Islanders and their nearest mainland neighbors the Ventureño has probably obscured some of the more superficial differences. This brings me to the topic of this paper: Although there are several areas I could discuss with respect to historical Chumash dialectology, I will here concentrate on only one, namely the prefixes which mark person and number in nominal possession and verbal inflection. My remarks constitute the results of work in progress, and I do not intend that they be the final words on the subject.

My data for Barbareño come from Madison Beeler's notes on the subject.[3] In all other cases, the information is directly or indirectly from John P. Harrington's field notes in the National Anthropological Archives, Smithsonian Institution.[4] (The direct source of the Ineseño data are the unpublished papers and thesis of Richard Applegate; his data derive directly from Harrington.)

As a very general statement we can say that Chumash dialects use the same prefixes to mark person and number in both nominal possession and verbal inflection. It is easiest to begin with Central Chumash to see how this works.[5]

	Nominal (possessive prefixes)	Verbal (subject prefixes)
S1	k-	k-
S2	p-	p-
S3	s-	s-
D1	k-iš-	k-iš-
D2	p-iš-	p-iš-
D3	s-iš-	s-iš-
P1	k-iy-	k-iy-
P2	p-iy-	p-iy-
P3	s-iy-	s-iy-

Possessive prefixes are almost always preceded by a particle, especially in examples found in texts rather than elicited as isolated forms. Examples of the use of the possessive and subjective prefixes include the following:

Nominal Possession: B hiheʔ k̓ap 'my house'
hošap 'his house'
hošteleq 'his tail'
hihoštuʔ 'her ear'
hihoʔpnoqš 'your head'
hek̓pu 'my hand'
hisiysʰehsʰe 'their bones' (the ones they possess)

I k̓ap 'my house'
makištiwal 'my carrying-net'
spɨl 'its (pine tree's) pitch'
kiyisku 'our guests'

P kak̓apam 'my knees'
kapmɨł 'your back'
ašɨł 'his leg'

Verbal Inflection: B sqlep hek̓pu 'there is a nick on my hand'
ksuxiy̓oxon 'I stirred up the water'
siyaxc̓awawan 'they (the frogs) are croaking'

V (no ʔan) kʰqisɨniłwaš micxanaqan 'I saw you at Ventura'
sisʰiluleqpeyus 'they (2) want to follow it'

P smomo 'it is foggy'

This neat and regular system has generally been cited in the past as the Chumash system. It was previously believed that Proto-Chumash when recontructed would look much like Barbareño since it agreed so well with the other Central dialects. Indeed, if all Chumash dialects looked this regular, there would be little to reconstruct or talk about. But I believe that Central Chumash has simplified what was originally a far more diversified system. Evidence for this can be seen by comparing the Island and Northern Chumash paradigms with each other and then with Central Chumash.

Island Chumash (Cruzeño)

	Nominal (possessive prefixes)	Verbal (subject prefixes)
S1	pa-č-/mi-č-	č-/m-
S2	pa-p-/si-p-	p-
S3	pa-s-/pa-c-	ø/ʔala- (nominalizer)

D1	pa-k-iš	k-iš-
D2	pa-p-iš	p-iš-
D3	pa-š-iš	iš-
P1	pa-k-i-/(ma-s-?)	unattested
P2	pa-p-i-	unattested
P3	pa-s-i	iy-

In Cruzeño, the use of the definite article pa- or another particle is obligatory in noun possession. Examples of the Cruzeño case include the following:

Nominal possession: pačˀiˀč 'my mouth'
papiˀč 'your mouth'
paspu 'his arm'

Verbal Inflection: makuluan 'I am going to dance'
myaya 'I am well'
čʰtisisin 'I lose my way'
čuwuwma ˀpiyo 'I want to eat black mussels'
pištʰkolooti 'you are looking at me'
sqočwa 'he emerges again'
ʔayetla micxanaqan 'he is from Ventura'
(< ʔala-yet-la)

Of particular interest are the first and second person noun prefixes (and the first person verbal prefixes). Though the corpus is regretably small for Cruzeño, it is easy to see that the distribution of pač- vs. mič- and pap- vs. sip- is not random. mič- is used in the corpus for the following items: father, grandfather, grandmother, mother, brother-/sister-in-law, older brother, older sister, paternal aunt, paternal uncle, maternal aunt, maternal uncle, orphan, good friend/companion, nephew, God, and nose. sip- is attested as occurring with the following items: grandfather, grandmother, mother, brother-/sister-in-law. (pač- is also attested with: father, orphan. pač-/pap- are attested with: younger sibling, daughter, son, grandchild, niece.)

It should be noted that with one exception (nose) these are all in the category of kinship terms, or more generally, terms of personal relationship of one kind or another (orphan, good friend/companion, God). The one non-kinship term is a body part term, and I will have more to say about this subsequently.

Beeler and Klar, in their unpublished Cruzeño sketch say:

"These data appear to reflect an older system of noun classification based upon distinctions made in the

> kinship structure, a system which has begun to break down and to be replaced by the universal p(a)-....On one of Harrington's file slips is written what appears to be a paradigm: 'my, your, his grandmother'; the prefixes are mi-č-, si-p-, and pa-s-. If that was part of the older system, it suggests an origin for the Cruzeño article in the third person singular prefix. It may or may not be significant that mi- and si- share the vowel -i- , which might be analyzed as a submorphemic element meaning 'near, or belonging to, me or you' and contrasting with the -a- of pa- 'farther away'."[6]

If this view is correct, then in can be argued that Island Chumash had a system which recognized degrees of closeness of noun possession which were reckoned from the speaker's point of view.[7]

With respect to verbal inflection, Cruzeño in the first person has two different prefixes, one of which is cognate with Central Chumash and one which seems to be a reduced form of the first person marker of noun possession.[8] Actually the m- is the more usual form, but the number of examples is too small to make any comfortable generalizations about this point. The unmarked third person is unique to Cruzeño, though the nominalized third person is not.

The situation for Northern Chumash lies somewhere between that of Central and Island Chumash.

Northern Chumash (Obispeño)

	Nominal (possessive prefixes)	Verbal (subject prefixes)
S1	ya-m-/mi-[9]	mi-/m- (mi- before V, m- before C)
S2	ya-p-	p-
S3	ya-t-/ya-ʦ-	ʦ-, s-/ɬ (nominalizing form)
D1	ya-k-si-[10]	k-si-
D2	ya-p-si-	unattested
D3	ya-t-si-	t-si-
P1	ya-k-ʔi-	k-ʔi-
P2	ya-p-ʔi-	p-ʔi-
P3	unattested	ʦ-ʔi-

In Obispeño, the use of the definite article ya- or another particle is obligatory in noun possession, as in Cruzeño (but not Central Chumash dialects where it is customary but not obligatory). Examples of the Obispeño case include:

Nominal Possession: mi?ɬhe 'my tongue'
mi?axa 'my bow'
yamqnipu 'my house'
yakⁿsisapi 'the father of us two'
yakišaqši? 'our rope'

Verbal Inflection: miqu 'I burned' (transitive)
minumeɬhe 'I went down'
(mitʸi) mi?aliqamša 'I am a twin'
pšanaqsanɬ 'you are sick'
kisqisini 'we want'

Again in Obispeño we find a morphological classification of nouns. There is a distinct prefix for kinship terms, body parts, and things one feels particularly attached to. mi- is used with the following items: bow, staff/walking stick, needle, charcoal; throat, tears, soul/spirit, heart, hair, tongue, forehead, eyebrows, mouth, heel, foot, fingernails; husband, mother, grandfather, uncle, aunt, older cousin, nephew, wife, sister- or brother-in-law. These categories are virtually the same ones which comprise the class of inalienably possessed nouns in Central Chumash. In Central Chumash there are morphological markers of inalienable possession, but no special, distinct personal possessives for these categories.[11]

To expand a little on the statement about Island Chumash quoted above from Beeler and Klar, I think that these variant forms point to the shape of the old Chumash system of verbal and nominal inflectional markers. In Proto-Chumash, I propose, there was classification of nouns, and morphological material to reflect it. We can see it in the daughter languages now only in the singular forms, and it is possible--perhaps even likely--that it never extended to the plural and dual forms.[12] In any case, we cannot tell for sure. At the time for which we have written records, the Island and Northern languages were in a state of change, tending toward regularization of the type found in Central Chumash, perhaps even partly because of pressure from the Central languages in a tribe whose numbers were rapidly dwindling. However, the languages died before the change was complete. One can't say that Obispeño was more "advanced" than cruzeno in this respect in that only the first person forms maintained the distinction whereas Cruzeño had it in both first and second persons. Cruzeño had already regularized to the extent that both the first and second persons used the same morphological formation--particle plus person/number marker--whether the particle was the definite article (pa-) or the special form (mi-/si-), thus doubly marking the person and number. Obispeño maintained in the first person what may have been the original usage, namely using only mi- without redundancy.

Concluding Statement. To conclude, then, the systems of person and number marking in Chumash are not neat and tidy, and several hypotheses could be advanced to explain the anomalies. What I think is clear, however, is that the Central Chumash paradigm is not representative of Proto-Chumash. Island and Northern Chumash retain remnants of the older system, but they are also probably incomplete having undergone morphological leveling and depletion in their development from the proto-language. It is also certain that a complete internal study of the origin of the person/number markers in Chumash would be greatly enhanced by a thorough study of all the particles, both nominal and verbal, and this I intend to do. The Proto-Chumash system may well turn out to be something quite different that this present study suggests--in fact, the means by which nouns and verbs were inflected, though they look so similar during the brief time in which there are attestations for these languages, may have been quite different from one another and may have undergone massive reshaping even before the three language groups diverged. Although internal reconstruction is necessary here before conclusive statements are possible, I believe that wider studies of Hokan languages may be very important to Chumash studies as well as we try to sort out the facts of Chumash prehistory and explain the family tree on the basis of our finite and limited body of data.

Edward Sapir pointed to particles of various shapes and functions as a distinguishing feature of Hokan.[13] If Chumash does belong with Hokan, forms such as the definite article, used in inflecting nouns, and special bound forms for kinship terms, body parts, etc., must have had their beginnings in the same set of items from which other Hokan idioms drew their forms for similar functions. I'd like to think that the origins are accessible and will continue working on the basis of that belief. I think that Chumash studies is ready to contribute its share to Hokan studies, and I further think that it is productive to proceed on the assumption that Chumash does indeed belong somewhere in the Hokan stock.

Addendum. As a working hypothesis of what the Proto-Chumash nominal and verbal inflectional system may have looked like, I offer the following schema. I would like to emphasize its tentative nature; it is only offered at this point as a guide to others working on Hokan languages on what one interpretation of the data suggests.

	Nominal	Verbal
S1	*k^1	*m-
S2	*p	*p-
S3	*s (or *ts)[14]	*ø or nominalizer

The S1 form *k^1 became k- in Central Chumash, ɣ- in Island Chumash, and would have became, regularly, t^y- in Northern Chumash.[15] However,

in Northern Chumash, the m- or the verbal system was taken into the nominal system as the regular first person marker, perhaps because of its similarity to mi-, the inalienable nominal possessive. *p- remained as p- in all dialects. *s-(or *ts-) was realized in Central and Island as s-; in Obispeño as s- or ts-. In the verbal system, the Central languages took the *k- from the nominal system and moved it into the S1 verbal position as well (compare the Obispeño case where the opposite happened). This suggests that the distinction of special forms for inalienably possessed items was already diminished or gone from Central Chumash. With all the appropriate levelings and substitutions, the daughter languages end up looking like this:

	Nominal	Verbal
S1	Central k	Central k-
	Island č	Island č-
	Northern m	Northern m-
S2	Central p	Central p-
	Island p	Island p-
	Northern p	Northern p-
S3	Central s	Central s-
	Island s	Island ø or nominalizer
	Northern s	Northern t-/ts-

These forms, of course, were always used with the appropriate particles.

---

[1] I use the term Obispeño interchangeably with Northerm Chumash in this paper. Similarly, Island Chumash is interchangeable with Cruzeño unless otherwise specified.

[2] Kroeber, however, was not of this opinion. See "The Chumash and Costonoan Languages", UCPAAE vol.9, no. 2 (Nov. 19, 1910) p. 264. Other Chumash observers implied a greater uniformity of the family based solely upon lexical inspection.

[3] See, for instance, Beeler, Madison, "Barbareño Chumash Grammar: A Farrago" in Hokan Studies (1976). I also relied upon unpublished notes and personal communications with Beeler.

[4] The papers of John Peabody Harrington are lodged in the National Anthropological Archives, Smithsonian Institution, and consist of hundreds of thousands of sheets on all the Chumash dialects and the ethnography of the tribe. They are our main source of grammatical information on dialects other than Barbareño.

[5]The abbreviations S, D, and P stand for singular, dual, and plural, respectively. 1, 2, and 3 used after them stand for first person, second person, and third person, respectively.

[6]The quotation is from the unpublished grammatical sketch and lexicon of Island Chumash by Beeler and Klar. The sketch is currently being prepared for publication.

[7]I think that a few words on Chumash particles are appropriate. All Chumash lexical items can be divided into three categories: noun, verb, and particle. Some particles are free, some are bound. Particles are a very large class with several subclasses, the largest of which is loosely called "demonstrative particles". This includes the definite article and numerous forms designating relative distance from the speaker (see the text). Other types of particles include nominalizers, predicators, and adverbials. Particles are not well-studied in Chumash and show an amazing diversity even among groups which have the same morphological and semantic function. Take, for instance, the variety of forms of the definite article in the different dialects:

Ineseno	ma-/ha-
Barbareno	(ho)l -
Ventureno	si-
Purisimeno	ka-
Cruzeno	pa-
Roseno	ka-
Obispeno	ya-

[8]Proto-Chumash had two velar consonants, which I designate *k^1 and *k^2, which may have arisen as a phonemic split of an original *k in certain environments. *k^1 was markedly more palatal than *k^2, and whereas *k^2 is realized in all Chumash dialects as k (or occasionally even q), *k^1 is variously realized as k in Central Chumash, č in Cruzeno, and t^y in Obispeno.

[9]The possibility that Obispeno mi- 'my' is of Spanish origin seems unlikely for several reasons. Though late contact with Spanish speakers may have reinforced its use, the evidence of Cruzeño and other internal indications in Chumash make it appear most likely that it is a native feature, which only coincidentally resembles the Spanish form.

[10]Chumash has rules for aspiration of stops in consonant clusters. The shape of the Obispeño forms as given here is morphophonemic; phonetically they are yak^{h}si-, yap^{h}si-, yat^{h}si-.

[11]See Applegate, Ineseño Chumash Grammar, p. 235 et seq.

[12]Cruzeño does appear to have one form which may indicate some type of special marking in non-singular forms. There is an occasional use of a prefix mas- 'our, plural' but its occurence in the corpus is so rare that general statements about it are impossible. Perhaps further investigation of particles will shed light on it, but for now, it must be said that virtually no evidence exists for special dual or plural forms.

[13]See, for instance, "The Hokan Affinity of Subtiaba in Nicaragua", American Anthropologist, vol. 27, no. 3 (1925), pp. 402-435 and vol. 27, no. 4 (1925), pp. 491-527.

[14]At the present time it is difficult to determine exactly how to reconstruct this third person nominal form. The s- is certainly correct; the t- is doubtful. It is possible that it is an old noun classifier which is retained only in Obispeño and Cruzeño. There is other evidence within Obispeño, however, which suggests that the inherited form is in fact ts-, and that Central and (usually) Island Chumash have reduced the form to s-. I feel certain that the matter will yield to further investigation.

[15]See note 8.

Notes on Walapai Syntax III*

James E. Redden

Southern Illinois University

Walapai has alienable and inalienable possession. Relatives, body parts, and certain other items are usually inalienable, i.e. having some close or permanent relationship to the possessor. In these cases, the possessive morpheme(s) precede(s) the thing possessed. Most other items are alienable, i.e. not having a close or permanent relationship with the possessor. In these cases, the thing possessed is followed by the possessive morpheme(s) and /wí/, *have, own.*

1. ñà lwá — *my wife*

2. ñà sál — *my hand*

3. wàksí ñà wí-č séy-k-yu — *My cow is fat.*

   (cow 1 have-nom. fat-3-be)

4. wâ ñà wí-č qàlyév-k-yu — *My house is big.*

   (house 1 have-nom. big-3-be)

But when what looks like a possessive pronoun precedes an alienable item, the meaning is *to me, in my opinion.*

5. ñà wàksíč séyku — *To me, the cow is fat.*

6. ñà wáč qàlyévkyu — *To me, the house is big.*

To express former and future possession, the particles /kúra/, *already, past*, and /vám/, *now, today*, are used, respectively.

7. wá kúra ñâ wí — *my former house*

8. kúra ñâ lwá — *my former wife*

9. vám wá ñâ wí — *my future house*

10. vám ñâ lwá — *my future wife*

In a somewhat similar manner, the speaker expresses his relationship to a situation or his knowledge of a situation by an /-ô/ suffix, which means something like *I have concluded, I think it to be the case.* In some cases, there is an opposition between nominative and accustative subjects, and additional pronouns may also occur.

11. há-v-č páy pém-k-yu — *The water is all gone.*

    (water-this-nom. all lack-3-be)

12. hấ-v-č̌ páy pém-ô-k-yu *The water is all gone.*

(water-this-nom. all lack-evidence/reason-3-be)

In 11, the water has run out just now and the speaker saw it run out. Therefore the speakers vouches for the accuracy of the statement. In 12, the water was all gone when the speaker saw the container. The speaker presents a conclusion, which seems reasonable given the situation, i.e. since the container is empty, the water must have all run out, leaving the container empty. 11 is factive---speaker is reporting something he witnessed; but 12 is non-factive---speaker is reporting something he has concluded or assumed, based on the evidence he has.

13. neqóv kwấn-o-k-û-ñ-a *He was killed by a bear.*
A bear killed him.

(bear kill-applic.-3-be-perf.-aor.)

14. neqóv-č̌ wà kwấn-ô-k-u-ñ *A bear killed him.*

(bear-nom. 3 kill-applic.-3-be-perf.)

13 is reported speech and non-factive. Note the accusative subject in 13. This indicates that speaker has come to this conclusion based on whatever report or other evidence he has. In 14, a fact is presented. The dead body is visibly present and no doubt bears the marks of the attack by the bear. Speaker is presenting a fact.

It is sometimes difficult to distinguish the conclusional or evidential /-ô/ from the stative /-ò/, especially if the stress is the same.

15. ñâ tó-p-k-yu *The sun has gone down.*

(sun be=not-lack-3-be)

16. ñâ tó-m-ò-k-yu *The sun is going down.*

(sun be=not-already-state-3-be)

In 15, it is night; the sun is lacking/not present. In 16, the sun is not already in the condition of lacking/being absent, i.e. the sun is almost down, but not quite. The informant did not want to state that 16 means that he had concluded that the sun must have gone down because of lack of light. Also, the informant rejected substituting /-p/ for /-m/ in 16, but the researcher thinks that other speakers would probably **accept it** and intends to pursue this point with other speakers.

17. hát-č̌ (y)ú-k-yu It's a dog.

18. hát-č̌ (y)ú It's a dog.

In 17, the speaker has gone to see what made a noise and has returned and reported that it was a dog, i.e. this is factive and the speaker vouches for the information. In 18, the speaker is responding to the question, "What's that (noise)?". Speaker concludes that the barking or other noise was made by a dog, i.e. this represents speaker's conclusion based on the evidence of the sound he heard.

19. ñá-č ñà sál čikiát-wi I cut my hand.

(1-nom. 1 hand cut-do)

20. ñá-č ñà sál čikiát I cut my hand.

It is sometimes difficult to see and state a difference between factive and non-factive, as in 19 and 20. 19 is factive, but 20 is non-factive. It seems that 20 is a sort of offhanded remark, or just a casual remark. The informant says that 19 is telling a definite person; and 20, not telling a definite person, i.e. 19 is stating a fact, but 20 is just a remark.

/-k/ and /-m/ make some additional differences not preiviously reported.

21. ñi-θá-k kwáu-k I talked about him.

(intense-that-allat. speak-3)

22. ñi-θá-m kwáu-v-ik I talked to/with him.

(intense-abl. speak-this/here-3)

The allative, which means *toward, in the direction of*, here is extended to mean *concerning, with reference to*. The ablative and commitative have the same form and are the same surface case.

23. ñáč yúmayu I will be next. It is my turn next.

24. ñáč yúmyu I am next. It is my turn next.

25. ñáč yúkyu It is MY turn next.

There seems to be little difference in 23 and 24 except that 23 is a present form and 24, a future. Both have the ablative /-m/, which no doubt means switch reference, i.e. when the person whose turn it now is **is** finished, then it will be my turn. 24 implies that someone else has tried to take speaker's turn or to take a turn out of turn. Thus, the /-k/ is same referent and means something like *It is still my turn.*

/-k/ also has the meaning *start, begin.* This can also mean *to do on purpose/intentionally, i.e. when one starts to do something, one does it intentionally.*

26. kwí vó-k-yu *It is raining.*

(cloud arrive-3-be)

27. kwí vo-k-k-yu *It is starting to rain.*

Cloud arrive-toward-3-be)

28. wí-m kísaká-k-yu — I slid down the hill on purpose.

(hill-abl. slide-to-be)

29. wí-m kíská-yu — I slid down the hill involuntarily. I slipped and slid down the hill

(hill-abl. slide-be)

Thus, it can been seen that moving toward doing something, as the allative /-k/ implies,means*begin, start,* and by extension *do on púrpose.*

* I am very grateful to the Department of Linguistics, the College of Liberal Arts, and the Office of Research Development and Administration at Southern Illinois University for their support for this research and support to attend the Hokan workshop.

POSSESSION EXPRESSIONS AND SEMANTIC CLASSES OF NOUNS*

by

Watahomigie, Lucille J., Jorigine Bender and Akira Y. Yamamoto
with
Elnora Mapatis and Josie Manakaja

0. Introduction

As one way to look at nouns, we will examine the possessive expressions and see how the nouns are classified by the Hualapai speakers.

Possession expressions can be roughly divided into three types: 1) [Possessor + Person Marker-Noun], 2) [Noun + Possessor + Person Marker-nyi-had] and 3) [Noun + Possessor + Person Marker-wi:]. The first frame is used to express some inherent or intrinsic relationship between the possessor and the possessed--sometimes referred to as "inalienable possession." This relationship is represented by the kinship relationship and body parts. We call this frame 1) the "Kinship Expression" hereonafter. The second frame contains the term had which can translate roughly as "to have X as a pet" (we will gloss the word as "pet" for the brevity sake in the following discussions). This frame then is used to describe the relationship of some pet animal and its owner, or some domesticated animal and its owner. We call the frame 2 as the "Animal Expression" in this paper. The last frame includes the verb wi: "to have, to own" and the frame is used to express a wide range of things which can be owned by an individual or a group of individuals. We use the term the "General Possession" to refer to this frame 3.

1. Kinship Expression: [Possessor + Person Marker-Noun]

All the kinship terms use this frame to express the kin-relationship. The first person marker '- may be deleted most often. The second person marker is m- and the third Ø- (null).

1. jida mother
   nya 'jida my mother
   ma mjida your mother
   nyiha jida his/her mother

2. dala father
   nya 'dala my father
   ma mdala your father
   nyiha dala his/her father

3. Hakdgwi:ve nya dalach dadaha:dkwi.
   Hakdgwi:v-e nya dala-ch dadaha:d-k-wi
   PeachSprings-around 1 1=father-Subj 3=work-ss-Aux
   My father is working in Peach Springs.

4. Ma mjidach gweviyam gowa:mk Banya:nyuwa ya:mkyuny.

ma m-jiđa-ch gweviyam gowa:m-k Banya:nyuwa ya:m-k-yu-ny
2 2-mother-Subj car 3/3=drive-ss Phoenix 3=go-ss-Aux-Past
Your mother drove the car to Phoenix.

We now list some of the kinship terms which appear in this frame.

5. a) Closest members of the family

đala	father
ginya	younger sibling
goda	mother's mother
gwawa	mother's father
hume'	one's son
jiđa	mother
misi'/misi:	one's daughter
monya	father's mother
nabo:	father's father
niya	older sibling
thawa	female's daughter
viche'/vche'	male's daughter

b) Close relatives

awa	one's son's child
gwela	mother's brother
ko:	one's daughter's child
mila	mother's younger sister
naja:	father's younger brother
nibi'/nibi:	father's sister
nithi'/nithi:	mother's older sister
nuwi	father's older brother

c) Other relatives

baya	female cousin
bi:	female's brother's child
jiga:va (ngaja'/nigajah "male cousins)	male cousin
no'/no:/hno'	female's older sister's child
nuđa	male's female cross-cousin
su:ja	male's older brother's child
wisa	female's younger sister's child
wana/hwana	male's sister's child

d) Other general terms

điyuch	relative
kacha/nukacha	male's step-child; step-father
kunye'	son-in-law; female's step-son
lowa/luwa	wife
nyahmi'	husband

vnye' daughter-in-law; female's step-daughter

A second class of nouns which utilize this expression-frame is the body-part nouns.

6. Body parts

hu'	head		
jivso'/jivso:	ribs		
ma:d	body		
mi'	foot		
mibat	leg		
mibuk	knee		
migavde'	big toe		
milga'/milgah	ankle	cf. midga'	small ankle
milqi	neck		
mi'sidwo	toe nail		
qwaw	hair		
sal	hand		
salgasva:d	wrist		
salgavde'	thumb		
salmak	shoulder		
saldi'j	finger		
sal'sidwo	finger nail		
siginy'ok	elbow		
silbu'	arm pit		
smadk	ear		
thipil	skin		
thivdi'/thivdi:	arm		
ya'/ya:	mouth		
yavnyimi:	beard		
yavpi'/yavpi:	chin		
yay	nose		
yibal/yi'bal	tongue		
yimwa:l	calf of one's leg		
yiwil	thigh		
yiwilpi	hip		
yo'/yo:	tooth		
yu'/yu:	eye/face		
yu'galme'	eyebrow		
yu'way/yuhway	heart/chest		
yumbul	forehead		
yu'sunya'/yusunya:	eyelash		
yu'thul	cheek		

Nouns other than kinship terms and body parts which are used in this frame include some of the clothings, but not all.

7. Clothing terms used in this frame

bud	hat

he'	dress
kamwid/kamhwid	pants
nyigway	shirt
nyigwaygavde'	jacket
nyigwaydamnalva	long coat

2. Animal Expressions: [Noun + Possessor + Person Marker-nyihad]
The frame is used for pet-animals, domesticated animals or potentially pettable animals.

8. 'had nya 'nyihadach anbil ya:l sma:kyu.
'had nya '-nyi-had(a)-ch anbil ya:l sma:-k-yu
dog 1 1-Poss-pet-Subj automobile under 3=sleep-ss-Aux
My dog is sleeping under the car.

9. Ma mdalach waksi ma mnyihada he:dkwi.
ma m-dala-ch waksi ma m-nyi-had-a he:d-k-wi
2 2-father-Subj cow 2 2-Poss-pet-Def 3/3=rope-ss-Aux
Your father is roping your cow.

10. Olo nya 'nyihadach viya:mkyu.
olo nya '-nyi-had(a)-ch viya:m-k-yu
horse 1 1-Poss-dog-Subj 3=run-ss-Aux
My horse is running.

When the speaker does talk about animals other than normally domesticated animals in this frame, he imposes the hearer the interpretation that the speaker indeed pets those unusual animals. For example:

11. Nago nya nyihadach hankyu.
nago nya nyi-had(a)-ch han-k-yu
bear 1 1=Poss-pet-Subj 3=good-ss-Aux
My bear is good.

12. Iya:s nya nyihadach hana da'opkyu.
iya:s nya nyi-had(a)-ch han-a da'op-k-yu
turkey 1 1=Poss-pet-Subj 3=good-Def 3=Neg-ss-Aux
My turkey is no good.

Examples of other animal nouns are presented below in section 3.5.

3. General Possession: [Noun + Possessor + Person Marker-wi:]
This is the most neutral form of expressing possession or belonging. Many categories of nouns that have not been covered in previous sections are expressed in this frame. Even many of the kinship terms are often used in this frame without apparently changing the meaning.

3.1 Kinship Terms
In principle, the nouns in this class are not used in this frame. When, however, a noun represents some non-unique or potentially multiple

entity (e.g., child as compared to one's father/mother), this general possession expression seems common:

13. Hma:ny nya wi:ch hanja đa'opme.
    hma:ny nya wi:-ch han-j-a đa'op-me
    children 1 1=have-Subj 3=good-pl-Def 3=Neg-Exc
    My kids are not behaving!

The following are a partial list of items which may or may not be expressed in A) Kinship Expression and/or B) General Possession. The Animal Expression is excluded simply because it is the clearest case where non-animals cannot be used in that frame.

14. Examples

English	Hualapai	A) Kinship Expression	B) General Possession
Body Parts (see Examples in 6)		yes	no
Kinship Terms (see Examples in 5)			yes (sometimes)
girl	misi'/misi:	yes =daughter	yes =girl
child	hmany	yes	yes
old man	bađay	?	yes
man	ba'	no	yes
woman	baqi	no	yes
doctor	haygu-githye'	no	yes
teacher	đinyu:d-bak'u:wo	no	yes
cowboy	waksigwij	no	yes
old lady	gwaguy/qamwidm	no	no
boy	hme'	no	no
boys	hmad	no	no
policeman	bakhe'd	no	no
mailman	đinyu:da-gwam	no	no

As the above short list may suggest, there seems to be a semantic continuum from the close kinship tie to the non-kinship tie, and accordingly the kinship expression only to the general expression only and finally to those which do not participate in the possession expression. As a natural consequence of such a continuum is a sub-class of nouns which belong to both, thus both possession expressions are used.

When the non-kin terms appear in the possession expression, the interpretation may vary depending on the context. For example, đinyu:d-bak'u:wo nya wi:hch hankyu "My teacher is good" may mean a) the teacher who teaches me most frequently, b) the teacher who takes care of me, c) my favorite teacher, d) the teacher with whom I associate most, and so on.

3.2 Personal Objects

In the list below, we will examine those objects or articles which are potentially owned personally.

15. Personal objects

English	Hualapai	A) Kinship Exp.	B) General Poss.
hat	bud	yes	yes
shirt	nyigway	yes	yes
jacket	nyigwayvde'	yes	yes
long coat	nyigwaydamnalva	yes	yes
shoes	mahnyo'	yes	yes
boots	mahnyo'-ilil	yes	yes
belt	gilgiovi	yes	yes
dress	he'	yes	yes
tie	hnaki	yes	yes
socks	mahnyo'gambey	yes	yes
personal belongings	jalay	yes	yes
shawl	sadam/sidami	yes	yes
glove	salsiyu:di	?	yes
glasses	yu'das'ami	?	yes
ring	salgidgo'	?	yes
earrings	smadkadiswedi	?	yes
underwear	kamwid-ya:lwaj	no	yes
beaded necklace	skul-hnaki	no	yes
watch	nya'	no	yes
diaper	jeqvi	no	no
pocket	dani:do	no	no

It is rather difficult to make any generalization as to which object can be expressed in which possession frame. The pocket dani:do is the clearerst case that needs no elaborate speculation. Namely, the pocket belongs to the pants/slacks/jacket/shirt/etc., not to an individual who is wearing it, therefore we do not use any possession expression. Similarly, the diaper jeqvi does not belong to any baby but simply used by the baby temporarily. Or as some of us feel, diapers nowadays are disposable and the temporary nature is getting even shorter!

The beaded necklace/bolo tie skul-hnaki, watch nya' and underwears kamwid-ya:lwaj are not used in the Kinship Frame. The reason is not very clear, but it is felt that these items are relatively new in the Hualapai culture.

3.3 Other Objects

Most other objects (e.g., food items, tools, household items, stationery, furniture and so on) are used with Frame B--General Possession. Some items in this general class, however, may be expressed in the Kinship Expression frame. When it happens, the interpretation is fairly specific. (It should be also noted that the interpretation for such cases is not universally agreed. Some speakers use both frames interchangeably and some still make the distinctions.)

16. a) Gwe nya hwaloch hankyu.
gwe nya hwal-o-ch han-k-yu
thing 1 3/1=dig-Place-Subj 3=good-ss-Aux
The garden that I cultivate is good.

b) Gwehwalo nya wi:ch hankyu.
gwe-hwal-o nya wi:-ch han-k-yu
thing-dig-place 1 3/1=have-Subj 3=good-ss-Aux
The garden that belongs to me is good.

17. a) Gwe nya hwalach hankyu.
gwe nya hwal-a-ch han-k-yu
thing 1 3/1=dig-Def-Subj 3=good-ss-Aux
The vegetable that I planted is good.

b) Gwehwal nya wi:ch hankyu.
gwe-hwal nya wi:-ch han-k-yu
thing-dig 1 3/1=have-Subj 3=good-ss-Aux
The vegetable that I have is good.

18) a) Nya miyalvch hankyu.
nya miyal-v-ch han-k-yu
1 bread-Dem-Subj 3=good-ss-Aux
The bread that I made is good.

b) Miyal nya wi:vch hankyu.
miyal nya wi:-v-ch han-k-yu
bread 1 3/1=have-Dem-Subj 3=good-ss-Aux
The bread that I have is good.

Note that a-sentences above all show the active involvement of the subject (i.e., in cultivation, growing and making), while b-sentences show simply the belonging or location of the object in relation to the subject. Those items that can be added to this list include:

19. a) madi:k bean
gamduqwath cantelope
diyach corn
qwaqduv deer jerkey
hamde pumpkin

but not:

b) ba:b potato
thabal peach
qwathga'ol orange

It should be pointed out that in such expressions, especially in the Kinship Expression frame, some demonstrative suffix must be added to be felt natural. For example:

20. a) ?nya madi:k — my bean
    b) nya madi:kny — that bean of mine

21. a) ?nya ɬiyach — my corn
    b) nya ɬiyachva — this corn of mine

Some wild plants may be owned and expressed in the Kinship Expression frame if those plants are culturally relevant; that is, if they can bear fruits which people can eat, or if they can be used for some culturally relevant purposes such as medicinal purposes. These plants include:

22. a) gith'e: — sqawberry
    hwa:l — ponderosa pine
    ko' — pinon tree/nut
    manaɬ — yucca
    viyal — mescal

    but not:

    b) a'a'/a'a: — saguaro
    alav/'lav — prickly pear
    aha' — cottonwood tree

3.4 Properties

The possession of some property can be expressed in the General Possession frame. Some property may be owned by an individual while some others may be owned by the community. This distinction is made by the addition or non-addition of the plural suffix -j.

23. a) Isavgo nya wi:hch maɬtha:vkyu.
    My corral is good-looking.

    b) Isavgo nya wi:jich maɬtha:vkyu.
    Our corral is good-looking.

24. a) Gwema:jo nya wi:vch saɬakvkyu.
    My cafe is open.

    b) Gwema:jo nya wi:jich sa'ambkyu.
    Our cafe is closed.

We can add to this list the following as further examples:

25. besbu:jo — bank
    ɬinyu:d'u:jo — school
    bahe'do/bahe:do — jail
    gathadgana:vjo — church
    gwejamo' — dump
    hmanyqach-baviso:jo — daycare center
    maɬjevyo:jo — clinic
    mulvwavyo:wo — tribal office
    ɬinyu:dva:wo — post office

When some property is felt to be almost an integral part of an individual, it may be expressed in a frame similar to the Animal Expression: [Possessor + Person Marker-nyi-Noun (property)]

26. a) Nya nyi'wa:vch hankyu.
This house of mine is good.

b) 'wa: nya wi:vch hankyu.
The house that belongs to me is good.

27. a) Ma mnyimaɬnych hankyu.
That land of yours is good.

b) Maɬ ma mwi:nych hankyu.
The land that belongs to you is good.

The a-sentences above state that the property is in an active use or is almost in an inseparable relationship with its owner.

3.5 Animals

As described in Section 2 above, the pet animals and domesticated animals are expressed in the frame: [Noun + Possessor + Person Marker-nyihaɬ]. They also appear in the General Possession frame. The wild animals are also expressed in this General Possession frame when they are in captivity or when someone temporarily keeps some wild animal before getting rid of it or keeping it as a new pet. The following (28b) is the list of animal names which are not ordinarily expressed in the Animal Expression frame.

28. a) Domesticated animals

bos	cat
gane:lo	sheep
gwalyaw	chicken
gwalyawgavɬe'	rooster
gwalyay-thaw	chick
'haɬ	dog
halavu:do	donkey
haqanmo:	duck
hwanygaɬaɬ	pig
savaɬo	goat
waksi	cow

b) Wild animals/other living things

amu'/'mu'	mountain sheep
ahma'/'hma'	quail
ɬathil	lizard
ɬiksi	prairie dog
ɬilbu'	roadrunner
ɬilgwam	horny toad
gaɬaɬa	porcupine
gaɬu:la	black lizard

gathad/kathad	coyote
gula	jackrabbit
guwi'	dove
guwila	mocking bird
gwalido:	pigeon
hadgwila	wolf
halgava'/halgava:	turtle
hami:da	chipmunk
hamilda	squirrel
hanykadapka	butterfly
hanykasavda	centipede
hinya'/hinya:	frog
hlo'	cottontail
hwi:wo'	skunk
ichi'i/ichi'	fish
ilwi	snake
iya:s	turkey
iyu:'	owl
jibay	bird
jimpuk/jinpuk	little (red) ant
jimyul	ant
jiqbanyk	bat
mahwa:'	badger
malga	packrat
mathul	chuckawalla
mathulda	gila monster
mithin'/mithin	buffalo
minmin	hummingbird
muhwa'	wild hog
ni:s	spider
ni:sdagwank	scorpion
nyimi'	bobcat
nyimida	mountain lion
qa:q	crow
qoqod	fox
qwaq	deer
qwaqda	elk
sinyida	hawk
thambo:	bee
thambu:dg	fly
u'hu:l	kangaroo rat
uwe'/'we'	mouse

4. Possession Expressions and Detached Suffix -o/-wo/-yo

In many cases of possession expressions, the suffix -o/-wo/-yo appears with them. Some speakers feel it is necessary to have one of them. When the suffix appears, it means that the object is not with the possessor, the object has just been taken off, the object has just been consumed, and so on--that is, in general it indicates some "detachment." The specific interpretation of the suffix depends on the context.

29. a) nya budo — my hat that I have just worn
    b) nya kamhwido — my pants that I just took off (and lying over there)

When the noun ends in a consonant, the suffix -o is added as in 29. When the noun ends in -vi, the suffix -yo is added. In all other cases -wo appears.

30. a) nya gilgioviyo — my belt that I have just used or that is lying over there
    b) nya jibeviyo — my blanket that I have just put away or that is lying over there

31. a) nya nyahmi'wo — my husband who is away
    b) nya misi:wo — my daughter who is not with me
    c) mahnyo nya wi:wo — my shoes that I have just too off or that is lying over there
    d) kwa' nya wi:wo — my knife that is lying there

When this suffix occurs with the noun with the homophonous locative suffix, there seems to be an interesting set of restrictions.

32. a) gwe nya hwalo — my garden (cf. gwe nya hwala)
    b)?gwehwalo nya wi:wo — my garden that I had (but no more)
    c) gwehwal nya wi:wo — vegetables that I planted and consumed

Example 32b sounds odd. It may be possible, however, if the garden is completely destroyed by a storm or by some other cause; thus, example 32b may state "my garden that has been destroyed."

33. my cafe

    a) nya gwema:jo
    b)?gwema:jo nya wi:wo
    c) gwema:jo nya wi:

In case of example 33c, the suffix -wo is not used on the verb wi:, but rather the locative -o is retained on the cafe as gwema:jo. This happens when the -o suffix has become an integral part of the word. Again example 33b seems odd, but it is again conceivable that it may be used when the cafe has been destroyed. Similar examples follow:

34. my living place, house

    a) nya 'wa'wo
    b)*'wa'wo nya wi:wo
    c) 'wa' nya wi:wo

35. my bedroom

    a) nya sma:jo

b)*sma:jo nya wi:wo
c) sma:jo nya wi: (i.e., my motel)

36. my jail

a)*bahe:do nya wi:wo
b) bahe:do nya wi:

37. my store

a)*sa'adjawo nya wi:wo
b) sa'adjawo nya wi:

38. my post office

a)*dinyu:dva:wo nya wi:wo
b) dinyu:dva:wo nya wi:

39. my school

a)*dinyu:d'u:jo nya wi:wo
b) dinyu:d'u:jo nya wi:

5. Epilogue

We have surveyed the three major ways of expressing the possession relationship in Hualapai. The question we have encountered in this investigation is that why it is that some nouns take one frame in expressing the possession relationship, while the others which seemingly belong to the same semantic category take another frame. Here we need to pool together the native speakers' linguistic/cultural knowledge and the outsiders' detached knowledge. A further study in this area by such a team will enable us to capture the Hualapai people's view of the world and how they systematize the reality around them.

*This paper is a part of the Hualapai Reference Grammar prepared during the summer of 1980 and now in the final stage of editing. We are grateful to Leanne Hinton who carefully and critically read the manuscript and made numerous and invaluable suggestions. We express our gratitude to the following for their generous financial assistance: American Philosophical Society Phillips Fund and the National Endowment for the Humanities Summer Stipend Ft-10810.

The preliminary version of this paper was presented at the 1980 Hokan-Yuman Workshop held at Berkeley. At that conference, the Hualapai Bilingual Education Program Director Lucille J. Watahomigie reviewed the history of the three-year Indian Languages Development Institute (san Diego 1978, Flagstaff 1979 and Albuquerque 1980) and emphasized the importance of the cooperative work between professional linguists and the native speakers. Jorigine Bender, Hualapai Bilingual staff, presented a set of linguistic games that resulted from the Institute; Josie Manakaja, Hualapai Bilingual staff, introduced the Yuman poems also resulted from the Institute. [The Yuman Poetry: Gigyayk Vo:jka! (Gallantly We March!) will be published by the Malki Museum Press in 1981.] Finally, Marguerite Hessini, linguistic graduate student at the University of Kansas, reviewed the evidential marking in Hualapai, the topic that was disscussed at the 1980 Institute.

POSSESSION EXPRESSIONS AND SEMANTIC CLASSES OF NOUNS*

by

Watahomigie, Lucille J., Jorigine Bender and Akira Y. Yamamoto
with
Elnora Mapatis and Josie Manakaja

0. Introduction

As one way to look at nouns, we will examine the possessive expressions and see how the nouns are classified by the Hualapai speakers.

Possession expressions can be roughly divided into three types: 1) [Possessor + Person Marker-Noun], 2) [Noun + Possessor + Person Marker-nyi-had] and 3) [Noun + Possessor + Person Marker-wi:]. The first frame is used to express some inherent or intrinsic relationship between the possessor and the possessed--sometimes referred to as "inalienable possession." This relationship is represented by the kinship relationship and body parts. We call this frame 1) the "Kinship Expression" hereonafter. The second frame contains the term had which can translate roughly as "to have X as a pet" (we will gloss the word as "pet" for the brevity sake in the following discussions). This frame then is used to describe the relationship of some pet animal and its owner, or some domesticated animal and its owner. We call the frame 2 as the "Animal Expression" in this paper. The last frame includes the verb wi: "to have, to own" and the frame is used to express a wide range of things which can be owned by an individual or a group of individuals. We use the term the "General Possession" to refer to this frame 3.

1. Kinship Expression: [Possessor + Person Marker-Noun]

All the kinship terms use this frame to express the kin-relationship. The first person marker '- may be deleted most often. The second person marker is m- and the third Ø- (null).

1. jida mother
   nya 'jida my mother
   ma mjida your mother
   nyiha jida his/her mother

2. dala father
   nya 'dala my father
   ma mdala your father
   nyiha dala his/her father

3. Hakdgwi:ve nya dalach dadaha:dkwi.
   Hakdgwi:v-e nya dala-ch dadaha:d-k-wi
   PeachSprings-around 1 1=father-Subj 3=work-ss-Aux
   My father is working in Peach Springs.

4. Ma mjidach gweviyam gowa:mk Banya:nyuwa ya:mkyuny.

ma m-jiđa-ch gweviyam gowa:m-k Banya:nyuwa ya:m-k-yu-ny
2 2-mother-Subj car 3/3=drive-ss Phoenix 3=go-ss-Aux-Past
Your mother drove the car to Phoenix.

We now list some of the kinship terms which appear in this frame.

5. a) Closest members of the family

đala	father
ginya	younger sibling
goda	mother's mother
gwawa	mother's father
hume'	one's son
jiđa	mother
misi'/misi:	one's daughter
monya	father's mother
nabo:	father's father
niya	older sibling
thawa	female's daughter
viche'/vche'	male's daughter

b) Close relatives

awa	one's son's child
gwela	mother's brother
ko:	one's daughter's child
mila	mother's younger sister
naja:	father's younger brother
nibi'/nibi:	father's sister
nithi'/nithi:	mother's older sister
nuwi	father's older brother

c) Other relatives

baya	female cousin
bi:	female's brother's child
jiga:va (ngaja'/nigajah "male cousins)	male cousin
no'/no:/hno'	female's older sister's child
nuđa	male's female cross-cousin
su:ja	male's older brother's child
wisa	female's younger sister's child
wana/hwana	male's sister's child

d) Other general terms

điyuch	relative
kacha/nukacha	male's step-child; step-father
kunye'	son-in-law; female's step-son
lowa/luwa	wife
nyahmi'	husband

vnye' daughter-in-law; female's step-daughter

A second class of nouns which utilize this expression-frame is the body-part nouns.

6. Body parts

hu'	head		
jivso'/jivso:	ribs		
ma:d	body		
mi'	foot		
mibat	leg		
mibuk	knee		
migavde'	big toe		
milga'/milgah	ankle	cf. midga'	small ankle
milqi	neck		
mi'sidwo	toe nail		
qwaw	hair		
sal	hand		
salgasva:d	wrist		
salgavde'	thumb		
salmak	shoulder		
saldi'j	finger		
sal'sidwo	finger nail		
siginy'ok	elbow		
silbu'	arm pit		
smadk	ear		
thipil	skin		
thivdi'/thivdi:	arm		
ya'/ya:	mouth		
yavnyimi:	beard		
yavpi'/yavpi:	chin		
yay	nose		
yibal/yi'bal	tongue		
yimwa:l	calf of one's leg		
yiwil	thigh		
yiwilpi	hip		
yo'/yo:	tooth		
yu'/yu:	eye/face		
yu'galme'	eyebrow		
yu'way/yuhway	heart/chest		
yumbul	forehead		
yu'sunya'/yusunya:	eyelash		
yu'thul	cheek		

Nouns other than kinship terms and body parts which are used in this frame include some of the clothings, but not all.

7. Clothing terms used in this frame

bud	hat

he'	dress
kamwid/kamhwid	pants
nyigway	shirt
nyigwaygavde'	jacket
nyigwaydamnalva	long coat

2. Animal Expressions: [Noun + Possessor + Person Marker-nyihad]
The frame is used for pet-animals, domesticated animals or potentially pettable animals.

8. 'had nya 'nyihadach anbil ya:l sma:kyu.
'had nya '-nyi-had(a)-ch anbil ya:l sma:-k-yu
dog 1 1-Poss-pet-Subj automobile under 3=sleep-ss-Aux
My dog is sleeping under the car.

9. Ma mdalach waksi ma mnyihada he:dkwi.
ma m-dala-ch waksi ma m-nyi-had-a he:d-k-wi
2 2-father-Subj cow 2 2-Poss-pet-Def 3/3=rope-ss-Aux
Your father is roping your cow.

10. Olo nya 'nyihadach viya:mkyu.
olo nya '-nyi-had(a)-ch viya:m-k-yu
horse 1 1-Poss-dog-Subj 3=run-ss-Aux
My horse is running.

When the speaker does talk about animals other than normally domesticated animals in this frame, he imposes the hearer the interpretation that the speaker indeed pets those unusual animals. For example:

11. Nago nya nyihadach hankyu.
nago nya nyi-had(a)-ch han-k-yu
bear 1 1=Poss-pet-Subj 3=good-ss-Aux
My bear is good.

12. Iya:s nya nyihadach hana da'opkyu.
iya:s nya nyi-had(a)-ch han-a da'op-k-yu
turkey 1 1=Poss-pet-Subj 3=good-Def 3=Neg-ss-Aux
My turkey is no good.

Examples of other animal nouns are presented below in section 3.5.

3. General Possession: [Noun + Possessor + Person Marker-wi:]
This is the most neutral form of expressing possession or belonging. Many categories of nouns that have not been covered in previous sections are expressed in this frame. Even many of the kinship terms are often used in this frame without apparently changing the meaning.

3.1 Kinship Terms
In principle, the nouns in this class are not used in this frame. When, however, a noun represents some non-unique or potentially multiple

entity (e.g., child as compared to one's father/mother), this general possession expression seems common:

13. ɬma:ny nya wi:ch hanja ɬa'opme.
hma:ny nya wi:-ch han-j-a ɬa'op-me
children 1 1=have-Subj 3=good-pl-Def 3=Neg-Exc
My kids are not behaving!

The following are a partial list of items which may or may not be expressed in A) Kinship Expression and/or B) General Possession. The Animal Expression is excluded simply because it is the clearest case where non-animals cannot be used in that frame.

14. Examples

English	Hualapai	A) Kinship Expression	B) General Possession
Body Parts (see Examples in 6)		yes	no
Kinship Terms (see Examples in 5)			yes (sometimes)
girl	misi'/misi:	yes =daughter	yes =girl
child	hmany	yes	yes
old man	baɬay	?	yes
man	ba'	no	yes
woman	baqi	no	yes
doctor	haygu-githye'	no	yes
teacher	ɬinyu:d-bak'u:wo	no	yes
cowboy	waksigwij	no	yes
old lady	gwaguy/qamwidm	no	no
boy	hme'	no	no
boys	hmad	no	no
policeman	bakhe'd	no	no
mailman	ɬinyu:da-gwam	no	no

As the above short list may suggest, there seems to be a semantic continuum from the close kinship tie to the non-kinship tie, and accordingly the kinship expression only to the general expression only and finally to those which do not participate in the possession expression. As a natural consequence of such a continuum is a sub-class of nouns which belong to both, thus both possession expressions are used.

When the non-kin terms appear in the possession expression, the interpretation may vary depending on the context. For example, ɬinyu:d-bak'u:wo nya wi:hch hankyu "My teacher is good" may mean a) the teacher who teaches me most frequently, b) the teacher who takes care of me, c) my favorite teacher, d) the teacher with whom I associate most, and so on.

3.2 Personal Objects

In the list below, we will examine those objects or articles which are potentially owned personally.

15. Personal objects

English	Hualapai	A) Kinship Exp.	B) General Poss.
hat	bud	yes	yes
shirt	nyigway	yes	yes
jacket	nyigwayvde'	yes	yes
long coat	nyigwaydamnalva	yes	yes
shoes	mahnyo'	yes	yes
boots	mahnyo'-ilil	yes	yes
belt	gilgiovi	yes	yes
dress	he'	yes	yes
tie	hnaki	yes	yes
socks	mahnyo'gambey	yes	yes
personal belongings	jalay	yes	yes
shawl	sadam/sidami	yes	yes
glove	salsiyu:di	?	yes
glasses	yu'das'ami	?	yes
ring	salgidgo'	?	yes
earrings	smadkadiswedi	?	yes
underwear	kamwid-ya:lwaj	no	yes
beaded necklace	skul-hnaki	no	yes
watch	nya'	no	yes
diaper	jeqvi	no	no
pocket	dani:do	no	no

It is rather difficult to make any generalization as to which object can be expressed in which possession frame. The pocket dani:do is the clearerst case that needs no elaborate speculation. Namely, the pocket belongs to the pants/slacks/jacket/shirt/etc., not to an individual who is wearing it, therefore we do not use any possession expression. Similarly, the diaper jeqvi does not belong to any baby but simply used by the baby temporarily. Or as some of us feel, diapers nowadays are disposable and the temporary nature is getting even shorter!

The beaded necklace/bolo tie skul-hnaki, watch nya' and underwears kamwid-ya:lwaj are not used in the Kinship Frame. The reason is not very clear, but it is felt that these items are relatively new in the Hualapai culture.

3.3 Other Objects

Most other objects (e.g., food items, tools, household items, stationery, furniture and so on) are used with Frame B--General Possession. Some items in this general class, however, may be expressed in the Kinship Expression frame. When it happens, the interpretation is fairly specific. (It should be also noted that the interpretation for such cases is not universally agreed. Some speakers use both frames interchangeably and some still make the distinctions.)

16. a) Gwe nya hwaloch hankyu.
gwe nya hwal-o-ch han-k-yu
thing 1 3/1=dig-Place-Subj 3=good-ss-Aux
The garden that I cultivate is good.

b) Gwehwalo nya wi:ch hankyu.
gwe-hwal-o nya wi:-ch han-k-yu
thing-dig-place 1 3/1=have-Subj 3=good-ss-Aux
The garden that belongs to me is good.

17. a) Gwe nya hwalach hankyu.
gwe nya hwal-a-ch han-k-yu
thing 1 3/1=dig-Def-Subj 3=good-ss-Aux
The vegetable that I planted is good.

b) Gwehwal nya wi:ch hankyu.
gwe-hwal nya wi:-ch han-k-yu
thing-dig 1 3/1=have-Subj 3=good-ss-Aux
The vegetable that I have is good.

18) a) Nya miyalvch hankyu.
nya miyal-v-ch han-k-yu
1 bread-Dem-Subj 3=good-ss-Aux
The bread that I made is good.

b) Miyal nya wi:vch hankyu.
miyal nya wi:-v-ch han-k-yu
bread 1 3/1=have-Dem-Subj 3=good-ss-Aux
The bread that I have is good.

Note that a-sentences above all show the active involvement of the subject (i.e., in cultivation, growing and making), while b-sentences show simply the belonging or location of the object in relation to the subject. Those items that can be added to this list include:

19. a) madi:k bean
gamduqwath cantelope
diyach corn
qwaqduv deer jerkey
hamde pumpkin

but not:

b) ba:b potato
thabal peach
qwathga'ol orange

It should be pointed out that in such expressions, especially in the Kinship Expression frame, some demonstrative suffix must be added to be felt natural. For example:

20. a) ?nya madi:k — my bean
    b) nya madi:kny — that bean of mine

21. a) ?nya ɬiyach — my corn
    b) nya ɬiyachva — this corn of mine

Some wild plants may be owned and expressed in the Kinship Expression frame if those plants are culturally relevant; that is, if they can bear fruits which people can eat, or if they can be used for some culturally relevant purposes such as medicinal purposes. These plants include:

22. a) gith'e: — sqawberry
    hwa:l — ponderosa pine
    ko' — pinon tree/nut
    manaɬ — yucca
    viyal — mescal

but not:

    b) a'a'/a'a: — saguaro
    alav/'lav — prickly pear
    aha' — cottonwood tree

3.4 Properties

The possession of some property can be expressed in the General Possession frame. Some property may be owned by an individual while some others may be owned by the community. This distinction is made by the addition or non-addition of the plural suffix -j.

23. a) Isavgo nya wi:hch maɬtha:vkyu.
    My corral is good-looking.

    b) Isavgo nya wi:jich maɬtha:vkyu.
    Our corral is good-looking.

24. a) Gwema:jo nya wi:vch saɬakvkyu.
    My cafe is open.

    b) Gwema:jo nya wi:jich sa'ambkyu.
    Our cafe is closed.

We can add to this list the following as further examples:

25. besbu:jo — bank
    ɬinyu:d'u:jo — school
    bahe'do/bahe:do — jail
    gathadgana:vjo — church
    gwejamo' — dump
    hmanyqach-baviso:jo — daycare center
    maɬjevyo:jo — clinic
    mulvwavyo:wo — tribal office
    ɬinyu:dva:wo — post office

When some property is felt to be almost an integral part of an individual, it may be expressed in a frame similar to the Animal Expression: [Possessor + Person Marker-nyi-Noun (property)]

26. a) Nya nyi'wa:vch hankyu.
This house of mine is good.

b) 'wa: nya wi:vch hankyu.
The house that belongs to me is good.

27. a) Ma mnyimadnych hankyu.
That land of yours is good.

b) Mad ma mwi:nych hankyu.
The land that belongs to you is good.

The a-sentences above state that the property is in an active use or is almost in an inseparable relationship with its owner.

3.5 Animals

As described in Section 2 above, the pet animals and domesticated animals are expressed in the frame: [Noun + Possessor + Person Marker-nyihad]. They also appear in the General Possession frame. The wild animals are also expressed in this General Possession frame when they are in captivity or when someone temporarily keeps some wild animal before getting rid of it or keeping it as a new pet. The following (28b) is the list of animal names which are not ordinarily expressed in the Animal Expression frame.

28. a) Domesticated animals

bos	cat
gane:lo	sheep
gwalyaw	chicken
gwalyawgavde'	rooster
gwalyay-thaw	chick
'had	dog
halavu:do	donkey
haqanmo:	duck
hwanygadad	pig
savado	goat
waksi	cow

b) Wild animals/other living things

amu'/'mu'	mountain sheep
ahma'/'hma'	quail
dathil	lizard
diksi	prairie dog
dilbu'	roadrunner
dilgwam	horny toad
gadada	porcupine
gadu:la	black lizard

gathad/kathad	coyote
gula	jackrabbit
guwi'	dove
guwila	mocking bird
gwalido:	pigeon
hadgwila	wolf
halgava'/halgava:	turtle
hami:da	chipmunk
hamilda	squirrel
hanykadapka	butterfly
hanykasavda	centipede
hinya'/hinya:	frog
hlo'	cottontail
hwi:wo'	skunk
ichi'i/ichi'	fish
ilwi	snake
iya:s	turkey
iyu:'	owl
jibay	bird
jimpuk/jinpuk	little (red) ant
jimyul	ant
jiqbanyk	bat
mahwa:'	badger
malga	packrat
mathul	chuckawalla
mathulda	gila monster
mithin'/mithin	buffalo
minmin	hummingbird
muhwa'	wild hog
ni:s	spider
ni:sdagwank	scorpion
nyimi'	bobcat
nyimida	mountain lion
qa:q	crow
qoqod	fox
qwaq	deer
qwaqda	elk
sinyida	hawk
thambo:	bee
thambu:dg	fly
u'hu:l	kangaroo rat
uwe'/'we'	mouse

4. Possession Expressions and Detached Suffix -o/-wo/-yo

In many cases of possession expressions, the suffix -o/-wo/-yo appears with them. Some speakers feel it is necessary to have one of them. When the suffix appears, it means that the object is not with the possessor, the object has just been taken off, the object has just been consumed, and so on--that is, in general it indicates some "detachment." The specific interpretation of the suffix depends on the context.

29. a) nya budo — my hat that I have just worn
    b) nya kamhwido — my pants that I just took off (and lying over there)

When the noun ends in a consonant, the suffix -o is added as in 29. When the noun ends in -vi, the suffix -yo is added. In all other cases -wo appears.

30. a) nya gilgioviyo — my belt that I have just used or that is lying over there
    b) nya jibeviyo — my blanket that I have just put away or that is lying over there

31. a) nya nyahmi'wo — my husband who is away
    b) nya misi:wo — my daughter who is not with me
    c) mahnyo nya wi:wo — my shoes that I have just too off or that is lying over there
    d) kwa' nya wi:wo — my knife that is lying there

When this suffix occurs with the noun with the homophonous locative suffix, there seems to be an interesting set of restrictions.

32. a) gwe nya hwalo — my garden (cf. gwe nya hwala)
    b)?gwehwalo nya wi:wo — my garden that I had (but no more)
    c) gwehwal nya wi:wo — vegetables that I planted and consumed

Example 32b sounds odd. It may be possible, however, if the garden is completely destroyed by a storm or by some other cause; thus, example 32b may state "my garden that has been destroyed."

33. my cafe

    a) nya gwema:jo
    b)?gwema:jo nya wi:wo
    c) gwema:jo nya wi:

In case of example 33c, the suffix -wo is not used on the verb wi:, but rather the locative -o is retained on the cafe as gwema:jo. This happens when the -o suffix has become an integral part of the word. Again example 33b seems odd, but it is again conceivable that it may be used when the cafe has been destroyed. Similar examples follow:

34. my living place, house

    a) nya 'wa'wo
    b)*'wa'wo nya wi:wo
    c) 'wa' nya wi:wo

35. my bedroom

    a) nya sma:jo

b)*sma:jo nya wi:wo
c) sma:jo nya wi: (i.e., my motel)

36. my jail

a)*bahe:do nya wi:wo
b) bahe:do nya wi:

37. my store

a)*sa'adjawo nya wi:wo
b) sa'adjawo nya wi:

38. my post office

a)*dinyu:dva:wo nya wi:wo
b) dinyu:dva:wo nya wi:

39. my school

a)*dinyu:d'u:jo nya wi:wo
b) dinyu:d'u:jo nya wi:

5. Epilogue

We have surveyed the three major ways of expressing the possession relationship in Hualapai. The question we have encountered in this investigation is that why it is that some nouns take one frame in expressing the possession relationship, while the others which seemingly belong to the same semantic category take another frame. Here we need to pool together the native speakers' linguistic/cultural knowledge and the outsiders' detached knowledge. A further study in this area by such a team will enable us to capture the Hualapai people's view of the world and how they systematize the reality around them.

*This paper is a part of the Hualapai Reference Grammar prepared during the summer of 1980 and now in the final stage of editing. We are grateful to Leanne Hinton who carefully and critically read the manuscript and made numerous and invaluable suggestions. We express our gratitude to the following for their generous financial assistance: American Philosophical Society Phillips Fund and the National Endowment for the Humanities Summer Stipend Ft-10810.

The preliminary version of this paper was presented at the 1980 Hokan-Yuman Workshop held at Berkeley. At that conference, the Hualapai Bilingual Education Program Director Lucille J. Watahomigie reviewed the history of the three-year Indian Languages Development Institute (san Diego 1978, Flagstaff 1979 and Albuquerque 1980) and emphasized the importance of the cooperative work between professional linguists and the native speakers. Jorigine Bender, Hualapai Bilingual staff, presented a set of linguistic games that resulted from the Institute; Josie Manakaja', Hualapai Bilingual staff, introduced the Yuman poems also resulted from the Institute. [The Yuman Poetry: Gigyayk Vo:jka! (Gallantly We March!) will be published by the Malki Museum Press in 1981.] Finally, Marguerite Hessini, linguistic graduate student at the University of Kansas, reviewed the evidential marking in Hualapai, the topic that was disscussed at the 1980 Institute.

Mojave k and m: It Ain't Necessarily So

Pamela Munro
University of California, Los Angeles

The use of the Yuman switch-reference suffixes -k and -m and the homophonous tense/aspect suffixes (which I have argued (Munro 1976a,b) to be historically related) in the languages of the River branch of the family is quite confusing. In Yuma, although most verbs take the suffix -k, there is a small number of verbs (just 21) which are always used with -m (Halpern 1947). In Maricopa, nearly half the verbs in the language are "-m verbs", as Gordon (1980) calls them, which are suffixed with -m in all the contexts when normal "-k verbs" take -k -- both in same-subject switch-reference contexts and for neutral tense/aspect marking. In Mojave, the situation has appeared messier -- according to my description (1976a), the tense suffixes -k and -m are in virtual free variation, although some verbs prefer one marker or the other.<1> Recently, however, I had the opportunity to test the degree to which some of Gordon's claims concerning the behavior of Maricopa -k and -m verbs were operative in Mojave, with startling results. In this note, then, I present a preliminary description of my current view of these Mojave suffixes, which now seem to me to be more complicated, and yet more regular, than I had previously perceived them.

I do not believe that I could easily have reached the conclusions I am about to describe without having Gordon's description of the simpler (I believe) Maricopa facts before me. Another factor which blinded me to certain incongruities in the Mojave data I collected during my dissertation research was my assumption (shared by numerous earlier researchers) that the suffix -k on (indirect? -- cf. Langdon 1981) quotation complements of the verb 'say' was an (aberrant) instance of the same-subject switch-reference marker. The occurrence of this -k, which Gordon (1980) has insightfully shown to differ in systematic ways from the same-subject marker, and that of other k-initial suffixes, on what appear to be Mojave "-m verbs" had convinced me that the occasional (!) failure of switch-reference observable with such verbs was just an arbitrary fact which might be explained later within some larger (possibly discourse-oriented) study.

Two other problems with my own description have helped to muddle the facts. First, since Mojave complements may frequently be postposed, I was able to analyze many defective instances of -m marking as main clauses. Consider the following sentence pattern: VERB-m VERB-k, where the two verbs have the same subject. I have assumed up till now that such sentences had the main clause (marked with "variant" -m) first, and the dependent same-subject clause second -- an analysis which avoids the problem of switch-reference failure. (Such an analysis was not available to Gordon, for Maricopa allows postposition of only a very restricted group of switch-reference-marked clauses.) Secondly, I did not pay sufficient attention to the difference between the plain suffix -k and the "augmented" suffix -ka or -ke (also -k'e).

For my brief investigation of the use of these suffixes, I checked the behavior of Mojave cognates to 21 Maricopa -m verbs and 8 Maricopa

-k verbs, using primarily those exemplified in Gordon (1980: 97), with my principal Mojave teacher Nellie Brown, with whom I intend to pursue this research further as soon as possible.

Now for the facts. My original claim that any Mojave verb may take either a -k or an -m suffix is substantiated, but in a rather surprising way. It seems that Mojave, unlike Yuma and Maricopa, has at least three groups of verbs, according to their behavior with the suffixes under discussion. Also, it appears that we must distinguish very carefully between Mojave plain -k and augmented -ka/-ke/-k'e. It also seems that there may very well be at least two different -m suffixes in Mojave.

I checked each verb in "neutral" form, learning that all the cognates to Maricopa -m verbs took -m in this form in Mojave, but finding that Mrs. Brown first cited a number of the Mojave cognates of Maricopa -k verbs with -m as well (it is just this kind of occurrence which proved so discouraging to my attempts to "explain" the use of Mojave -k and -m in the past!). After recording the one or more "neutral" forms Mrs. Brown volunteered, I asked for her judgment on variants using the other tense suffixes. In addition, I checked each verb in one or more same-subject contexts, and I checked for progressive versions of active verbs. On the basis of the data collected, the verbs considered fall into three distinct groups:

(A) Non-adjectival -m verbs (iduu 'be', a'wii 'do', i'ii 'say', upaa 'lie down', upam 'fall/be tired', isma 'sleep', iv'aw 'stand', suupaw 'know', chaqaw 'eat raw fruits', ama 'eat', ithii 'drink', a-ay 'give', akya 'shoot', kuvnaw 'lift', and tapuy 'kill' -- each of these corresponds to a Maricopa -m verb). These verbs, like the Maricopa -m verbs, take -m (never -k), as their neutral tense/aspect marker, and are suffixed with -m in same-subject switch-reference contexts:

(1) iv'aw-m isvar-m 'He stood up and sang'

(2) suupaw-m suupaw-ke 'He knows that he knows'

(3) chaqaw-m vi-iva-ke 'He's eating an apple'

(4) nya-tapuy-m apar-m 'When he killed it, he yelled'

As in Maricopa, same-subject may be indicated for such verbs when certain non-final suffixes intervene between the -m verb and the same-subject marker:

(5) 'inyep ny-aay-p-k iyem-ch 'He gave it to me and left'

Just as in Maricopa, quotation complements of 'say' and related verbs like 'think' are generally followed by -k, even with verbs whose neutral marker is -m:

(6) ama-k e-p-t-ch 'He says he ate it'

(7) '-suupaw-k '-aly'ii-m 'I think I know it'

However, in contrast to the situation in Maricopa,<2> verbs of this group may be followed by an "augmented" -k suffix, -ka, -ke, or -k'e, as in (2) above, or

(8) iv'aw-k'e 'He stood up'

(9) '-aaym-t-k '-a'wii-ka 'I did it any old way'

(10) ny-aay-ke 'He gave it to me'

(Notice that such sentences have a definite past translation.) The same set of suffixes may also follow verbs of this group in same-subject switch-reference contexts, it appears (though this needs more checking):

(11) ithii-ke 'ich ama-nti-ke 'He drank and ate'

Also, the connective suffix -kt (to whose importance Judith Crawford has drawn my attention) may also follow such verbs:

(12) isma-kt ipuy-p-t-ch 'He died in his sleep'

(13) iv'aw-kt inak-m 'He stood up and then sat down'

(B) Adjectival -m verbs ('aqwaath 'be yellow', 'oya'oy 'be spherical', valytay 'be big', 'ahay 'be wet', 'ahwat 'be red', and 'ath'iily 'be salty' -- all of which are cognate to Maricopa -m verbs). Like their Maricopa cognates and the Mojave verbs of the previous group, these verbs are normally suffixed with -m in neutral contexts:

(14) 'aqwaath-m 'It's yellow'

Like the verbs of Mojave group (A), these verbs may also take augmented -k suffixes:

(15) valytay-m / valytay-ke 'It's big'

Note that for these stative verbs there is no restriction to past reference for the augmented -k suffix.

However, the normal same-subject marker volunteered for such verbs is not -m but an unaugmented -k:

(16) 'aqwaath-k 'ahoot-taahan-m 'It's yellow and pretty'

(17) valytay-k humii-k ido-p-ch 'He's big and tall'

(18) 'ahay-k hapel-k iduu-ke 'It's wet and dirty'

(19) 'oya'oy-k ich'aw-k 'It's round and little'

(C) -k verbs (isay 'be fat', isvar 'sing', iima 'dance', inak 'sit', iuy 'die', iyuu 'see', ithoo 'eat meat', ichoo 'make', and iyem 'go', all of which are cognate to Maricopa -k verbs), regardless of

semantic type. As in Maricopa, these verbs take -k marking in all expected contexts. Their neutral tense marker is (or can be) -k, as in

(20) isay-k 'He is fat'

(21) isvar-k 'He sings'

-k is the only suffix I have recorded on these verbs in same-subject contexts:

(22) iima-k suupaw-m 'He knows he danced'

(23) isvar-k vi-iva-m 'He is singing'

Such verbs also occur with an augmented -k tense marker, as in

(24) iyem-ke 'He went'

As with the examples above, in the cases I have examined recently these augmented -k suffixes always have a past translation (for active verbs, at any rate).

This group of verbs also may occur with the -kt connectve and -k complementizer suffixes exemplified above:

(25) isvar-kt inak-m 'He sang and then sat down'

(26) ichoo-k i-m 'He said he made it'

Like the verbs of the two previous groups, Mojave -k verbs may be followed by an -m "tense marker", too, as in the main clauses of sentences (1), (4), (13), and (25) above, all of whose verbs are in this group, and sentences like

(27) isay-m 'He is fat'

(28) ithoo-m 'He ate it'

(29) ichoo-m 'He made it'

It appears that these -m forms have much the same semantics as do the augmented -k forms exemplified above: for active verbs at least, they have a definite past-tense interpretation (actually, the interpretation seems similar to that of the complex Mojave aspectual suffix -p-ch -- cf. Munro 1976a).

Thus, the original description of Mojave verb marking I presented in 1974 is largely correct -- any Mojave verb can be suffixed with some sort of -k suffix or some sort of -m suffix when it is used in a main clause. However, straightening out what exactly these suffixes are and how they are used presents a clearer picture of how Mojave usage compares to that in the other River languages.

I believe that the semantic and distributional evidence presented

above is sufficient to justify our distinguishing the plain Mojave -k same-subject and tense/aspect suffixes (which I have claimed to be related, historically at least; cf. Munro (1976a-b)) from the various augmented suffixes.

It seems further that there are at least four -m suffixes which must be recognized: the normal different-subject switch-reference suffix -m of song and story, the neutral -m tense/aspect marker of groups (A) and (B) above (still more consevatively, we might call this two -m's, but I won't go that far at this point), the (same?) -m in switch-reference contexts for group (A), and the past/perfective -m exemplified in (27)-(29). It is clear that more investigation is needed before we can determine how much overlap there is between these different -m's, even synchronically. For instance, I am not sure whether it is possible to determine if the "past" -m of (27)-(29) may account for some of the -m's on -m verbs of either group, or not. It may be that for some speakers this perfective -m has a different phonetic realization than the other -m's mentioned, since both J. P. Harrington and Judith Crawford have recorded "past" suffixes of the shape -'m in Mojave. The Maricopa evidence suggests strongly that the second and third -m's above are somehow "the same", and Gordon (1980) presents additional evidence suggesting that these two are treated like the normal different subject -m (the first of the four -m's above) in Maricopa -- for instance, certain Maricopa evidential suffixes lose their initial -k just in those contexts where they would underlyingly be preceded by either different-subject -m or the -m of an -m verb.

There remain two questions to be raised here. One concerns the origin of the augmented -k suffixes described above, and the second the meaning of these Mojave facts for the larger Yuman problem referred to in the first paragraph.

Since the augmented -k's have been argued above to have a distribution distinct from that of the plain -k, we may wonder what their origin was. The occurrence of these suffixes on -m verbs, plus the occasional appearance of a ' in the augment, suggests the possibility that these suffixes might reflect the "complementizer" -k plus some form of the verb 'say', whose only consonant (in some forms) is a glottal stop (I think that a 'say' origin for the -'e augment at least was suggested to me by Judith Crawford). The semantics and motivation for such a development are not completely clear to me, but this does seem like the most likely suggestion at present. (Note, though, that 'say' never has any vowel other than i in final position.) A way of testing the extent of the connection of augmented -k's with the plain same-subject -k would be to see if augmented -k's on dependent verbs (as in (11) above) could occur in different-subject contexts. I have not yet investigated this interesting question.

Yumanists have wondered for some time whether the Maricopa -k/-m distribution described by Gordon (1980) was innovative or archaic. Yuma, with a somewhat more restricted case of what seemed to be the same thing, could represent (on the one hand) an extensive levelling of distinctions preserved in Maricopa, or (on the other) an incomplete development along Maricopa's innovative lines. The problem, of course,

is that nowhere other than in the River languages is there a comparable interruption of switch-reference or any kind of alternation between -k and -m as main-verb suffixes. The Mojave evidence described above may be of some help in unravelling the directionality of these developments.

At first glance, I find that the Mojave evidence suggests Maricopa to have innovated. If the Mojave situation is indeed as I describe it above, it seems most likely to me that the adjectival -m verbs of group (B) represent an incomplete stage of the evolution of active/transitive -m verbs like those in group (A) or like Maricopa -m verbs. One of the reasons the (B) verbs appear conservative is that -k appears on these verbs only in subordinate clauses, never in main ones: it is a truism of recent diachronic theory that subordinate clauses tend to be syntactically more conservative than main clauses. However, sentences like the following remain to be interpreted:

(30) 'oya'oy-m valytay-taahan-m 'It's round and real big'

This was the only such sentence (containing an apparent failure to mark same-subject switch-reference with a verb of group (B) -- note that the same verb allows same-subject marking in sentence (19) above) in my recently gathered data. In earlier days I would doubtless have allowed myself to believe that (30) contained two independent sentences, but this seems like too easy a cop-out now. It suggests to me that (if the "first glance" hypothesis above proves correct) the Mojave verbs of group (B) may be becoming more like the verbs of group (A) and that, perhaps, they may eventually, like the verbs of group (A), refuse to allow the marking of switch-reference at all. Obviously, a more extensive study is necessary to determine exactly what is going on.

Several other things need to be mentioned. First of all, it is not true that there is no trace of "funny -m's" outside of River, since the incompletive suffix on the Yavapai existential auxiliaries yu 'be', wi 'do', and 'i 'say' has exactly that shape (cf. Hardy 1979, Kendall 1976), and these three verbs are the most salient members of the River -m group. This seems like sufficient evidence to suggest a more remote origin for the obligatory -m on the existentials, at least. This in turn suggests the hypothesis that such a reconstructable -m marking on existentials (perhaps originally only in their "auxiliary" use) may have been extended to some other set of verbs. However, defining how that set of verbs was chosen will have to await a later explanation.

Footnotes

1. I am grateful to Lynn Gordon for helpful discussions of some of the background for this note.

2. Lynn Gordon has told me in strictest confidence that Maricopa -m verbs may sometimes be suffixed with -ka in texts. This matter deserves further investigation, doesn't it?

BIBLIOGRAPHY

Applegate, Richard B., 1972, Ineseño Chumash Grammar, University of California, Berkeley, Ph.D. dissertation

Beeler, Madison S., 1976, Barbareño Chumash: A Farrago, in Langdon, M., & S. Silver, eds., Hokan Studies: Papers from the First Conference on Hokan Languages, The Hague, Mouton, 251-69.

Beeler, Madison S. & Kathryn A. Klar, Island Chumash Sketch: Grammar and Lexicon, forthcoming.

Bright, William, 1957, The Karok Language, UCPL 13.

Campbell, Lyle, & David Oltrogge, 1980, Proto-Tol (Jicaque), IJAL 46:3:205-23.

Comrie, Bernard, 1976, Aspect, New York, Cambridge University Press.

Crawford, James, 1966, The Cocopa Language, University of Calofornia, Berkeley, Ph.D. dissertation.

_____, 1976, A Cocopa Tale: The Alligator Who Couldn't Turn Over, in M. Langdon, ed., IJAL Native American Text Series, Yuman Texts.

Dixon, R. M. W., 1979, Ergativity, Language 55:1:59-138.

Fowler, Carol, 1977, Timing Control in Speech Production, University of Connecticut, Ph.D. dissertation.

Givón, Talmy, 1979, On Understanding Grammar, New York, Academic Press.

Gordon, Lynn, 1980a, Maricopa Morphology and Syntax, UCLA, Ph.D., dissertation.

_____, 1980b, -k and -m in Maricopa, UCLA Papers in Linguistics 8:119-44.

Halpern, A. M., 1947a, Yuma V: Conjugation of the Verb Theme, IJAL 13:92-107.

_____, 1947b, Yuma VI: Miscellaneous Morphemes, IJAL 13:147-66.

Hardy, Heather K., 1979, Tolkapaya Syntax: Aspect, Modality, and Adverbial Modification in a Yavapai Dialect, UCLA, Ph.D. dissertation.

Harrington, John P., papers, in the National Anthropological Archives, Smithsonian Institution, Washington, DC.

_____, n.d., Fieldnotes on Chimariko.

Harwell, Henry O., 1976, The "say" Auxiliary Morpheme in Maricopa: Some Notes and Speculations, in J. E. Redden, ed., Proceedings of the 1975 Hokan-Yuman Languages Workshop, SIU University Museum Studies 7: 63-70.

Hinton, Leanne, 1977, Havasupai Songs: A Linguistic Perspective, UCSD, Ph.D. dissertation.

Jacobsen, William, 1954, Fieldnotes on Salinan,

Jacobsen, William, 1967, Switch-Reference in Hokan-Coahuiltecan, in Hymes, D., & H. Bittle, Studies in Southwestern Ethnolinguistics, The Hague, Mouton, 238-63.

Kendall, Martha B., Selected Problems in Yavapai Syntax: The Verde Valley Dialect, New York, Garland.

Klar, Kathryn A., Topics in Historical Chumash Grammar, UCB, Ph.D. dissertation, 1977.

Kozhevnikov, V. A., & L. A. Chistovich, 1965, Rech: Artikulyatsiya i Vospriyatiye, Moscow-Leningrad.

Kroeber, Alfred L., The Chumash and Costonoan Languages, UCPAAE 9:2:237-71, 1910.

Langdon, Maragert, 1970, A Grammar of Diegueño: The Mesa Grande Dialect, UCPL 66.

_____, 1975, Boundaries in Lenition in Yuman, IJAL 41:3:218-33.

_____, & Pamela Munro, Subject and (Switch-)Reference in Yuman, Folia Linguistica, forthcoming.

Munro, Pamela, 1976a, Mojave Syntax, New York, Garland.

_____, 1976b, Subject Copying, Auxiliarization, and Predicate Raising: The Mojave Evidence, IJAL 42:99-112.

Oswalt, Robert, 1970, Comparative Verb Morphology of Pomo, in M. Langdon, & S. Silver, eds., Hokan Studies, The Hague, Mouton.

_____, 1971, Inanimate Imitatives, in J. Sawyer, ed., Studies in American Indian Languages, UCPL 65:175-90.

_____, 1975, The Word for "Water" Revisited, paper presented at the 1975 American Anthropological Association meeting, San Francisco.

_____, 1977, The Word for "Tongue": The Pomo Evidence, in J. E. Redden, ed., Proceedings of the 1976 Hokan-Yuman Languages Workshop, OPLing 2:69-78.

Redden, James E., Walapai I: Phonology, IJAL 32:1:1-16, 1966.

Sapir, Edward, The Hokan Affinity of Subtiaba in Nicaragua, Ammerican Anthropologist (N.S.)27:3:402-35, 27:4:491-527, 1925.

_____, & Morris Swadesh, 1960, Yana Dictionary, UCPL 22.

Shaterian, Alan, n.d., Yavapai Phonology, ms.

Silver, Shirley, 1976, Comparative Hokan and the Northern Hokan Languages, in M. Langdon & S. Silver, eds., Hokan Studies, The Hague, Mouton, 193-202.

Silverstein, Michael, 1976, Hierarchy of Features and Ergativity, in R. Dixon, ed., Grammatical Categories in Australian Languages, Canberra, Australian Institute of Aboriginal Languages.

Webb, Nancy M., 1980, Esselen-Hokan Relationships, in J. E. Redden, ed., Proceedings of the 1979 Hokan Languages Workshop, OPLing 7:72-77.

Winter, Werner, 1976, Switch Reference in Yuman Languages, in M. Langdon, & S. Silver, eds., Hokan Studies, The Hague, Mouton.

Addendum

Kendall, Martha B., 1975, The /-k/ and /-m/ Problem in Yavapai Syntax, IJAL 41:1:1-9.

Langdon, Margaret, 1976, The Proto-Yuman Vowel System, in M. Langdon, & S. Silver, eds., Hokan Studies, The Hague, Mouton.

_____, & Pamela Munro, 1980, Yuman Numerals, in K. Klar, M. Langdon, & S. Silver, eds., Papers in Honor of Madison S. Beeler, The Hague, Mouton.

Munro, Pamela, 1980, Types of Agreement in Mojave, in J. E. Redden, Proceedings of the 1979 Hokan Languages Workshop, OPLing 7:1-14.