Yuman Language Interrelationships: The Lexical Evidence

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0. This paper will describe and discuss a study that considers the question of the degree of genetic relationship among the several members of the Yuman group of languages, each one with each other. The question is explored using cognate lexical criteria. The various degrees of relationship that the data suggest are stated quantitatively and the classification of the Yuman languages is reviewed and discussed in light of these findings.

In 1943 A. L. Kroeber considered the classification of Yuman languages. Using his own field notes and those of E. W. Gifford he devised a pattern reflecting varying affinities. He based his groupings of mutually close languages on comparably similar phoneme inventories and probable shared sound shifts although he included lexical data (103 etyma) in his published statement. Then, in 1957, Werner Winter published a consideration of the Yuman relatedness question. His study uses his own field material, also, which he collected from 9 Yuman languages. He made a lexical as well as a phonological comparison of them and the results of one method supported those of the other. His broader material well bore out the classification of Kroeber and he discussed in detail his findings. He used "--100 lexical items chosen at random, though with considerable emphasis on words from Swadhish lists, --1 to find identical pairs in two languages. His standards for concluding identity were quite strict. Although pairs were not based on proto forms reconstructed from corresponding, regularly recurring phonemes he speaks of requiring "two corresponding items" to establish identity. 1

Recently Alan Wares (1968) has presented a monograph comparing Yuman consonants. He compares 12 Yuman languages, collecting material himself in eight of them. A proto phoneme inventory from regularly corresponding phonemes is reconstructed resting on evidence from 501 lexeme sets. He includes a short statement of Yuman classification using lexical data to support one grouping and phonological for the others. In reviewing Wares' work Margaret Langdon (1970) points out the inadequacy of this method and suggests that his abundant and insightful reconstructions could yield a more precise statement of relationships. This present paper is an attempt to do just this.

1. Data. The corpus of data employed here is the "Comparative Yuman Vocabulary" from Wares. 3 Of those 501 lexeme sets 7 sets were not used here because of problems of compounding, cognacy and the like. 4 Of the remaining sets 42 were combined for reasons of redundancy and/or overlap and interchanging of meaning. These pairs are indicated by Wares in his sets. Examples of these are "to cook", "to boil" and "boy", "son". The comparable parts, root consonants, are the same and meaning interchanging. Therefore, a total of 452 lexical sets were tabulated with their cognate evidence for each of the 12 languages used marked. Since the Diegueño evidence is slim in Wares' collection 80 lexemes from the Dictionary of Mesa Grande Diegueño" by Couro and Hutcheson (1973), a work not available to Wares, that were judged cognate were included. It is from all these
data that the total number of corresponding cognate lexemes shared by each pair of presumed related languages was calculated and the results are presented in Table 1 as percentages.

Within the corpus of 452 sets most (95%) of the Rea (1958) list of 100 select vocabulary items and, also, 185 of the 207 word list of Gudshinsky (1956) are included. Table 2 shows as percentages the shared retained cognate lexemes for each pair of languages with the 100 word list and Table 3 shows the 207 word list. Table 1 is illustrated in Fig. 1 as an isometric projection of the results. At the left in each table the actual number of cognate lexemes retained by each individual language alone is indicated and after it in parentheses is the percentage for the given list that that represents. The languages and their abbreviations are: Campo, Ca; Kiliwa, K; Tipai, T; Diegueño, D; Cocopa, Co; Maricopa, Ma; Mohave, Mo; Yuma, Yu; Havasupai, H; Walapai, W; Yavapai, Ya; Paipai, P. Languages will be referred to by abbreviation throughout the paper.

2. Tables and Figure.

Table 1. Interrelationships with the 452 word list.

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The two languages most meagerly attested are Ca with 29% and K with 33% retained forms in the full 452 etyma list. On the other hand Ya has 64% and P has 67% of this list and all others alone retain 54% or more. The question in hand, however, is one of relative shared retentions of items by pairs of languages and not that of cognates for each language by itself. Still, in the cases of Ca and K the slim volume should be noted while considering the tables.

All the languages share alike 30 sets (7%) of the 452 list and of these 20 (21%) are included in the Rea list, 25 or 14% for the Gudshinsky list. If these two lists truly represent conservative, long retained vocabulary then the Yuman languages all share a large basic heritage of forms that have been resistant to loss. This evidence set forth here would seem to lend support to one of the cardinal tenets of the theory of glottochronology, that of a long maintained core vocabulary.

3. Discussion. The view of subgrouping within the Yuman family by the workers spoken of at the beginning of this paper can probably be considered simply as Kroeber's arrangement and variations of it. This can be charted as follows:

<table>
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<tr>
<th>Kroeber:</th>
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<th>Delta group</th>
<th>Mexican-Calif. group</th>
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The names of the groups are changed by Wares. He adds P to the Arizona group and calls them Northern Yuman. This, although the P live 300 miles southwest of the other three. These are grouped for reasons of shared lexemes. The River Group he calls Central Yuman and are distinguished from the others phonemically. The Delta and part of the Mexican-Calif. group are combined on phonemic grounds while K is set apart alone for both lexical and phonemic reasons. Wares says that the Delta-Calif. group is not a clearly demarked unit but he does not agree with Winter that D is not part of any subgroup of Yuman languages. Winter sets D as both lexically and phonemically separate while Ca is in an intermediate position between D and Co. In turn, Co is intermediate between Ca and Ma though clearly apart from Ma, Mo, Yu. These three are a separate subgroup from the Arizona three but Mo shares many features with H, W, Ya. These observations are just as Kroeber witnesses in 1943. Kroeber feels that his Mexican-Calif. unit is not a clear one and that Konia (Ca) is probably a dialect of D. D and Co are close to each other and to the River languages while P and K are similar to each other. He recognized this similarity of P to W but does not join them.

Just what insight do the results of the present study give into this problem of interrelationships. On examining the 452 etyma table the group H, W, Ya, P stands out separately from all the rest. They share retentions in the range of 46% to 55%. Tables 2 and 3 demark them even more dramatically. P shows special closeness with Co and T, also. These last three languages are geographic neighbors now. Winter suggests that the present home of the P is recent, that they are migrants from the northeast, and are a displaced Northern Yuman member. The thesis is supported
The long list supports a closeness of Mo, and of Ma too, to W as spoken of by Kroeber and Winter. The special lists suggest only Mo as being closer not just to W, rather to the northern Yumans as a whole.

Now we note on the full list a clustering of Mo, Ma, Yu and Co, all in the range of 42% to 47% shared retentions. The various degrees of retention among them seem to reflect geographic position, one to another. This is as Kroeber remarked. The conservative vocabulary tables depict much the same thing but add D as having affinities with Mo. Ma and P share a high rate of retentions with Mo particularly.

One more clustering emerges rather clearly from Table I. That is of Co, D and T. D has its greatest affinities with T on the general vocabulary list but as to long retained vocabulary it appears nearer to Co. In special words D seems more close to P and Ya. Co is as a bridge from D to Mo, Ma and Yu as suggested by others.

On all tables the affinities of K appear to be greatest with the northern Yuman languages, including P. While the total retention by K is scant much of it is of the conservative inventory. This suggests that its retentions with H, W and Ya are not just due to contact with P its nearest neighbor. In fact, K records higher rates of retention of conservative words with the H, W, Ya, P group than of general vocabulary, the more likely borrowed vocabulary.

The position of Ca emerges as being with D, T and Co about equally. It is, therefore, difficult to see it as a dialect of D. It may be the lack of evidence that distorts here.

This same picture can be seen in the isometric projection with the more closely allied language groups appearing rather as hills or mounds. In the upper left the H, W, Ya, P group humps high with their mutual low affinity to Yu making a trough. Then moving right and forward the Mo, Ma, Yu, Co cluster rises. It is not quite so clearly defined. Their mutual low relation with H in particular shows as a valley separating them from the other north languages. Coming on down page and to the right again we see a tent-like hump formed by Co, D, T with the D low affinity to all other Yuman languages cutting like a low line across the figure, up and right. Finally, in the upper right of the figure the K special sharing with W, Ya, P rather than with its neighbors D, Ca and T appears as a slight rise.

Can the phonological correspondences that Wares delineates give any classification insight? The consonant phonemes of Proto Yuman do evince certain patterns in the development of their reflexes. These can be summarized from the chart (p. 70) as follows. (Ca not included by Wares.)

Ya, W, H as a group share no unique development. Ya, W, H, Mo share *s becomes ŋ while *s becomes s elsewhere.

Ya, W, H, Mo, K share *s becomes s while *s becomes ŋ elsewhere (s in P).

*x becomes h while *x becomes x elsewhere.

*x becomes h while *x becomes x or x elsewhere.

*xW becomes hW while *xW becomes xW elsewhere.

Ya, W, H, P share alike all developments except above five.
Mo, Ma, Yu share *λ becomes 1 while *λ becomes 1 or ɾ elsewhere.
  *y becomes ɾ while *y becomes ɾ post stress elsewhere.
  *v becomes v while *v becomes w pre stress elsewhere.
Co, D, T share *λ becomes ɾ while *λ becomes 1 or ɾ elsewhere.
  *k becomes ɾ while *k becomes k elsewhere.
Co, D, T, K share *v becomes p while *v becomes w elsewhere.
Co unique in *c becomes s while *c becomes c elsewhere.
  *t becomes c while *t becomes t elsewhere.
  *t becomes t while *t becomes t elsewhere.
  *n becomes n while *n becomes n elsewhere.
D and Yu share *x becomes x while *x becomes x or h elsewhere.
D unique in *k becomes k while *k becomes k elsewhere.

The foregoing summary of the development of proto phoneme reflexes lends no support to view H, W and Ya alone as a group. Their strongest ties are to P with whom they share 21 of the 26 consonant correspondence sets. P differs from the northern three only in that one set they share with Mo and the four others they share with K and Mo. Further, we see that K is apart from H, W, Ya and P only in these four sets which it does not share with P. K and H, W, Ya share common development of 21 of the 26 proto phonemes. Therefore, K appears to be part of Kroeber's "generalized Yuman".

Next, we see that the group Mo, Ma and Yu have three sets of mutual developments. Co does not figure in any of these, rather it unites with D and T for two reflexes and with D, T and K for one more. Then also, Co has four development sets all its own. D has only one unique reflex and joins Yu in another set. With these the lexeme picture is not neatly mirrored. There Co was intermediate between Mo, Ma, Yu and the D, T, Ca languages. Phonetically Co links D, T and K to a certain extent while reflecting many particular developments of its own. It has the phonetically most diverse development of the Yuman languages.

The position of both P and K with relation to their near neighbors geographically is not clear. K shares only one reflex development uniquely with Co, D and T while P shares none.

4. Conclusion. All the evidence compiled and presented here supports certain observations as to the probable patterning of Yuman family interrelationships. This can be described as encompassing a loose unit that can be called Yuma A. It is composed of T, D, Ca and Co. Co appears as a link to another group, Yuma B; the languages Ma, Yu and Mo. In turn Mo bridges these to a large section labeled Yuma C and made up of H, W, Ya, P and K. This group falls apart into a Northern Yuma C (H, W, Ya) and Southern Yuma C (P and K).

The emergence of this pattern can be postulated as occurring as a development of Proto Yuman. A primary split in Proto Yuman produces a group from which descends Yuma A separating from the other Yuman speakers. This Proto Yuman A develops independently and with time divides into the modern Yuma A languages; first Co splits off, then D and T separate and most recently Ca separates from D.
Proto Yuman B continues as a unit and later giving rise to a section which will reflect as the present day Yuma C complex. The remainder evolves as Yuma B. Of the Yuma C group an early fracture isolates the parents of the K speakers. These migrate south and west of the main body. In more recent times a second section repeats this migrant pattern. These are the parents of today’s P. Finally, the remainder of the Yuma C divide into what now constitute the H, W and Ya languages.

Diagrammatically this would appear:

```
    Proto Yuman
   /     \          /     \           /
  PYu A   PYu B    YU A     YU B  YU C
     /     \    /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \  /     \ 
    T  D  Ca  Co    Yu  Ma  Mo  W  H  Ya  P  K
```

This historical explanation of Yuman development accounts for both the phonological and lexical evidence of degrees of interrelationship. Its evolutionary notions which envision separations and migrations of peoples at differing periods of time reflect the complex linguistic patterns presented. The use of letters to name the groups avoids some of the problems of geographical titles.

On the whole the classification of Kroeber continues to be borne out by the more extensive material of this study. The main innovation is the joining of P and K in a larger group with H, W and Ya as sharing a period of common divergence from all other Yuman languages. The affinities of these five were noted by Kroeber with his scant material but he eschewed combining them. Joel felt their various differences far outweighed similarities. On the other hand Wares and Winter both place P with H, W and Ya as undergoing a long period of common development prior to separating. K is set apart, however. The strong phonetic evidence and the lexical evidence, though weaker, attest to an affinity of K with H, W, Ya and P.

This study demonstrates, as pointed out by Winter in 1957, how very close to one another the many languages of the Yuman family are.

Notes
2. Joel (1964) modifies Kroeber’s classification of the California Yuman languages on the basis of her field notes. Historical and cultural factors are involved in the explanation.
3. Wares (1968), Chapter XII.
4. These sets are numbered: 69, 96, 279, 305, 396, 464, 494.
5. Those sets retained by all twelve languages are glossed: air/wind, animal/dog, beard/fur, blood/body/meat, cloud, drink, ear, earth, eye, fat, fear, fire, foot/leg, hand/arm, horn, moon, root, one, sky, smoke, three, tongue, tooth, water, wildcat, buzzard, corn, metate, quail/hen.
6. Joel (1964) marks K as clearly divergent. Then P is separated from the California group of Kroeber which leaves only D in that older classification section. The number of cognate stems that are shared among all these
languages is noted as representing an older stratum. The affinities of P with Arizona languages is remarked as reflecting common conservatism rather than long common development. The linguistic divergence of D and Co developed along with rapid culture change influenced by outside contact.

7. This supposes a proto homeland in the Colorado River-Arizona region. The only evidence linguistically to suggest this is the phonetic development of H, W and Ya. They retain the greatest number of Pyu phonemes unchanged of all the languages. Sapir theorizes that such languages are more probably living in or near the old homeland.

8. This assigning of letters to mark the groups revives, with alterations, that method used in 1776 by Fr. Francisco Garcés.
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ANNOUNCEMENT

The Proceedings of the First Yuman Languages Workshop, published in this series last year, are now out of print. They are available in either microfiche or hard-bound copy from the ERIC Clearinghouse. This volume will also be available from the ERIC Clearinghouse after it goes out of print.

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Southern Illinois University at Carbondale
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PREFACE

In 1970 numerous linguists working on Hokan and Yuman languages were invited by Margaret Langdon to attend a conference at the University of California, San Diego. This made it possible for specialist to get to know each other and to learn in detail what each other was doing. The meeting was so successful that participants soon began asking when we would meet again. In 1975 Margaret Langdon invited the Yumanists to a workshop in conjunction with the research being done at the Yuman Languages Archives which she had established with the aid of a National Science Foundation grant. Again, the participants felt that the workshop was so successful that we ought to meet every year if possible. In 1976 another workshop was held at UCSD to which both Hokanists and Yumanists were invited. These proceedings are the result of that workshop. It is now expected that Hokanists and Yumanists will meet every year. The 1977 meeting will be at the University of Utah in Salt Lake City.

The participants of the 1976 Hokan-Yuman Languages Workshop gratefully acknowledge all the work that Sandra Chung and Pamela Munro did in organizing and running the workshop. Thanks are also due to Donald Crook and Susan Norwood for looking after the many details that helped make the workshop run smoothly.

Unfortunately, everyone who presented a paper at the 1976 Hokan-Yuman Languages Workshop was not able to prepare a final version for inclusion in this volume before it went to press. All the papers in this volume were presented in an earlier version at the 1976 workshop except the ones by Langdon and Webb, which were not ready in time for presentation for the workshop. However, since many of the points they contain were discussed at the workshop, they are included here.

The papers are presented according to the groups of languages presented at the workshop. Since there were some last minute changes in the program, I must plead faulty memory if I inadvertently placed some papers in an order different from that of the workshop presentation. The Langdon and Webb papers are included in the appropriate groups.

James E. Redden
Carbondale, May 1977
CONTENTS

Crock, Rena, Leanne Hinton, and Nancy Stenson
The Havasupai Writing System 1

Kendall, Martha B.
The Upland Yuman Numeral System 17

Redden, James E.
Notes on Walapai Verb Root Structure 29

Yamamoto, Akira Y.
Some Processes of Compounding in Walapai 34

Mixco, Mauricio J.
The Determiner in Kiliwa 37

Langdon, Margaret
Yuma(Kwtsaan) After 40 Years 43

Munro, Pamela
The Yuman *n* Prefix 52

Webb, Nancy M.
Yuman Language Interrelationships: The Lexical Evidence 60

Oswalt, Robert L.
The Word for 'Water': The Pomo Evidence 69

Moser, Mary B.
Switch-Reference in Seri 79

Bibliography 93

Announcement 96